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THE

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THE LIMITATIONS OF GARDENING.

THE pleasures associated with the practice of gardening depend very greatly upon atmospheric conditions. When these are almost perfect—an experience of late years sufficiently rare; when we have days of brilliant sunlight, whose splendid monotony is enlivened at intervals by gentle summer showers, drooping like mercy, as described by Shakespeare, “upon the place beneath”; when fruits, nourished and stimulated by beneficent influences, are seen growing perceptibly day by day; then the heart of the horticulturist rejoices, for nature is his friend. But when—as during the last two months in Scotland—this radiant picture of steadfast growth and perfect evolution is entirely reversed; when the heavens are almost continually darkened, and there is more than an abundance of cold and cheerless rain; when for days there is not a smile of sunshine to brighten the foliage, or revive the drooping flowers; then the penalties of horticulture begin to appear. Calamities, it has been said, seldom come singly, and it is chiefly when suffering from such conditions

of earth and atmosphere, excessive moisture, and winter-like depression, that the “monstrous regiment” of insects, aided materially by rats and voles, begin their operations, seeking assiduously amid our fairest floral treasures what they may devour. Little wonder that before the insidious attacks of such enemies as these the patience of the horticulturist becomes exhausted; that his exercise of the high qualities of faith, and of perseverance in the garden, seems utterly in vain; his thoughts on such occasions, instead of being reverential, are almost profane. In a single night his culinary Peas (though coated carefully with red lead before being hopefully committed to the well-prepared ground), entirely disappear, eaten down by their ravenous, nocturnal foes. Perhaps his saddest reflection is this: that he has not the pleasure of shooting these antagonists, which, as soon as they hear him entering his earthly paradise, like the tent-lifting Arabs in Longfellow's poem, “silently steal away.” I write these words from sad and stern experience, and I feel that thousands of horticulturists at this moment, touched with a feeling for their own garden adversities, could effectively do the same.

Entomology is an extremely attractive subject for the scientific specialist, who revels in the study of insect life; but to the cultivator it is not quite so inspiring. He beholds with emotions akin to despair the tender leaves of his finest Plums and Cherries almost wholly destroyed; his Oriental Lilies decline to “rise to the occasion” when the vernal season comes, because their precious bulbs have, by the secret agencies of pernicious pests, been secretly consumed; and he is utterly impotent, for the prevention of such evils is beyond his utmost power. Nor are his quite involuntary entomological studies more edifying to the ardent rosarian; he cannot contemplate without visible emotion the tender, richly-coloured flower-shoots of his Rose trees, rendered useless by green-flies, whose most notable characteristic is their power of multiplication; he cannot overlook, with all his tenderness, the dissimulation of the caterpillar, as he hides himself by day between two closely-folded leaves; like a burglar, says Dean Hole, who conceals himself in the shrubbery, before making a nocturnal attack upon the silver in the dining-room.

It is manifest, therefore, that the affirmation of Wordsworth, “Nature never did betray the heart that loved her,” is not always expressive of horticultural conviction. Especially in such a season as we have recently experienced, the stern reverse is true. Nevertheless, amid all atmospheric and earth-born tribulation shall we cherish the secret sunlight of cheerfulness and hope; for as one of our greatest moralists (and satirists) has said: “Man never is, but always to be blest.” David R. Williamson, Manse of Kirkmaiden, Wigtownshire.

MONREITH.

IN the south-west of Scotland, in that peninsula of Wigtownshire which terminates in the bold promontory of Burrow Head, lies the beautiful estate of Monreith, for centuries the home of the Maxwells of that ilk, and now the property of the Right Honourable Sir Herbert Maxwell, Bart.

It was with pleasurable anticipations that the writer made his way to Monreith recently, although the weather was of the most unpropitious kind and there seemed no prospect of even a gleam of sunshine.

The mansion of Monreith is one of those comfortable country houses belonging to the period which terminated the eighteenth century, and it is situated some little distance from an old tower which is all that remains of the ancient castle of the family, and in which King James IV. once passed a night. Although the exterior is comparatively plain, it is made picturesque by rambling and climbing plants.

From the library, direct access is provided by a French door and a flight of steps, to the garden front. The old garden is situated at the castle, but gradually the gardens at the present mansion are being extended and beautified in a most charming manner.

Beneath the windows are simple rock-beds filled with the best Alpine flowers, such as the spring-flowering Phlox, Androsace, Corydalis, Campanula, Dianthus, and other choice flowers of the kind. They are, as a whole, doing admirably, and, low as is the elevation, they are generally thriving better than in most gardens. Facing to the south-west, these beds, which consist of low mounds, almost level, with stones here and there, are excellent for the purpose.

Below the terrace, and a little in front of it, a wall garden has been constructed from rough stones found on the estate to take the place of steep, grass-covered terraces.

Above this wall is a border planted with some good Cisti, Veronics, and other shrubs of low growth, while the wall itself is being gradually furnished with flowering plants, and it is of much interest to observe the behaviour of some plants which are not hardy when planted on the level ground. Thus *Onosma taurica*, which died out last winter in the beds, is flourishing on the wall, although it has precisely the same exposure. Another plant of interest in this connection is *Gerbera Jamesoni*, which has survived the past winter planted in this wall, and was coming into flower. In gardens where it is difficult to keep this plant alive during the winter it may well be tried in the same position as at Monreith. *Incarvillea grandiflora*, *Saponaria Boissieri*, and other suitable Alpine plants were observed in this capital example of wall-gardening. The wall-garden is to be extended, and there is a continuation of the grass banks on either side which will afford a variety of position. Among other plants observed on the wall or the rock garden, and close to the house, were some of the best *Lithospermums*, including the species *Gastoni*, *prostratum*, *graminifolium*, &c., a number of *Belladonna Lilies* (rarely seen in the open in this part of Scotland), *Hypericum fragilis*, *H. reptans*, *Cheiranthus mutabilis*, *Ramondias*, and many more.

The flower garden at Monreith is of the most delightful character, and is composed of beds and borders cut in the grass or among the borders of shrubs and trees which surround the mansion and protect it from the strong sea breezes. One can wander among bays in the trees and shrubs and continually observe some new feature of pleasure in the shape of herbaceous plants or shrubs

arranged informally, in large groups as a rule. The collection of hardy plants is an extremely good one. There are bold groups of Funkias; Oriental and other Poppies; Asphodels, Anthericums; Phloxes, Geraniums, Lupins, Ononises (*O. rotundifolia* being very good indeed for the district), Libertias, *Orchis foliosa*, *Cypripediums*, such as *C. spectabile* (not very long lived here); *C. Calceolus*, and others. Large masses of *Trillium grandiflorum* were doing splendidly, and the flowers were probably finer than I have before seen them. The group figured in the *Gardeners' Chronicle*, June 22nd last, p. 412, was especially fine. *Primula japonica*

niums, Irises, and many other things, generally arranged with taste and having a charming effect with their settings of green turf and the beautiful shrub and tree life about and around them. Eremuri are not doing well at Monreith this season.

TREES AND SHRUBS.

One is at a loss to know which of the shrubs to select for mention. For many years Monreith has been noted for these, and the collection is always being added to from new or rare species and varieties as they come into commerce. Rhododendrons were very effective at the time of my visit. There are many

ing their surroundings. Of other shrubs there were noted *Andromedas*; *Ozothamnus rosmarinifolius* (growing splendidly), the tender *Embothrium coccineum*, which I was glad to find here; the beautiful *Edwardsia* or *Sophora tetraphylla*, in flower on the walls and thriving happily; *Chionanthus virginicus*, *Akebia quinata*, *Cordyline australis*, *Cassia fulvida*, *Indigofera Gerardiana*, *Enkianthus japonicus*, *Pittosporums*, *Hydrangea arborea*, *Lepedeza cyrtobotrya*, many good *Berberises*, including a specimen of *B. buxifolia* 13 feet high and 90 feet in circumference, referred to in this journal on June 22nd, p. 412; *Xanthoceras sorbifolia*, and many



FIG. I.—*DIPELTA FLORIBUNDA*, A HARDY SHRUB.

A, lateral petal; B, flower showing abortive bract; C, portion of corolla removed to show stamens and pistil. (See text, page 3.)

was very fine both in the woods and in the borders. Many noble plants of *Phormium*, which flower well, are here. I also saw the beautiful *Rodgersia æsculifolia* and *R. pinnata*, and a number of *Liliums*, such as *L. rubellum*, *L. giganteum*, of which there are many plants of various sizes, but few blooming this year; *L. pomponium rubrum*, *L. pardalinum*, *L. chalcodonium*, apparently slightly attacked with disease; *L. monadelphum*, *L. auratum*, and others, generally in splendid condition. These borders were also furnished with *Spiræas* and *Astilbes*, *Asters*, *Tropæolum polyphyllum*, *Delphi-*

beautiful hybrid *Rhododendrons*, but Sir Herbert Maxwell has more appreciation for the Himalayan and other species, which generally do so well here, that commoner kinds are being largely superseded by these grand shrubs. Great masses of *R. ponticum* which have been in the woods for years past are being cut out and the Himalayan species and other choice shrubs and trees are being planted in their stead. Specimens of such fine *Rhododendrons* as *R. arboreum*, *R. campanulatum*, *R. Falconeri*, *R. cinnabarinum*, finely in flower; *R. barbatum*, and many more were seen in perfect health, and evidently enjoy-

others. A critical examination of the trees of greater size would have occupied a whole day, and I must forbear any reference to them beyond mentioning the great number and variety of these in the vicinity of the mansion.

The old garden at the Castle, now unnecessary in view of the extensions at the mansion, is largely laid out in grass, but at an earlier time the flower garden must have been charming with the old building looking down upon it. Here is a fine row of *Cypresses* raised from seeds brought from Italy by Sir Herbert Maxwell.

THE VEGETABLE AND FRUIT GARDENS

are still near to the Castle, and here I found the usual requirements of an establishment such as Monreith well cared for. As a whole, the crops promised fairly well. An interesting plant here is the progenitor of the celebrated Castle Kennedy Fig. The vegetable garden contains the usual crops, with groups of flowers for cutting, and many seedlings of hardy plants, such as *Sparaxis pendula*, *Phormium tenax*, &c.

The glass is not extensive, but, in keeping with the rest of the gardens, is admirably cared for, under the charge of Mr. S. Gordon, the gardener.

There was much else to be seen in passing through the grounds, a pretty effect being made by the thousands of early-flowering bulbs. Not the least interesting feature is the manner in which plants are placed in bold groups in the woods.

Monreith is deeply interesting to the lover of plants, and its beauties show the impress of the love of nature possessed by Sir Herbert Maxwell, and which is so apparent to every reader of his many works. S. Arnott.

NEW OR NOTEWORTHY PLANTS.

DIPELTA FLORIBUNDA.*

THREE species of the genus *Dipelta* are recorded from China, namely, *D. elegans*, Batalin; *D. yunnanensis*, Franch. and *D. floribunda*, Maxim. An example of the last-named species has recently flowered in the Coombe Wood nursery of Messrs. James Veitch & Sons for the first time in this country.

Dipelta floribunda is a handsome deciduous shrub, allied to *Diervilla*, and was introduced to cultivation through Mr. E. H. Wilson, who sent living roots from Central China to Messrs. Veitch in 1902, and in 1904 a supply of seed collected on Mount Wa, in Western China.

The species was first collected around Hans-chunfoo, Shensi, by Dr. Piatetski, a Russian army surgeon attached to the Sosnovski expedition to China 1874-75, and on his specimens Maximowicz founded the genus.

Wilson in his notes describes it thus:—"A shrub 4 to 15 feet high, flowers white and pink, woods 4,800 feet, Wa Shan."

The plant at Coombe Wood is about 4 feet high, and in habit of growth and general appearance resembles a *Diervilla* (*Weigela*). The branches are covered with a light-coloured bark, which peels off the older portions of the branches; the young bark is reddish brown.

The leaves are opposite and decussate, ovate or ovate-lanceolate, acuminate, 3 to 3½ inches long by 1 to 1½ inches broad, shortly petiolate, covered with a short velvety pubescence on both surfaces and slightly toothed along the upper third of their margins.

The flowers are produced singly in the axils of the leaves or in racemes composed of four flowers terminating short growths which form along the whole length of the previous year's shoot. The slender, hairy pedicels are about ¾ inch long, and bear at the base two small bracts. The calyx is composed of five linear spreading sepals ½ inch long and attached to the sides of the inferior ovary are four bracts, two of which, the anterior and posterior, remain abortive, whilst the two lateral ones develop into large rounded flattened discs (*peltæ*) attached at the centre.

The corolla is tubular, about 1½ inch long, narrowed towards the base, where it is slightly spurred, inflated at the throat, expanding at the mouth into a two-lipped, five-lobed limb; the ex-

terior is rose-pink, passing to white at the mouth; the interior is white, with a yellow reticulation. The stamens are four in number, two of which are long, and two short; the filaments are attached to the corolla tube, the anthers dorsifixed. The style, about ¾ inch in length, is terminated by a simple stigma. Both stamens and pistil are enclosed in the corolla tube. According to the *Index Flora Sinensis*, the fruit is said to be an edible, red berry.

Plants have been growing at Coombe Wood in the open without any protection since 1902, and appear to be perfectly hardy. The dried specimens collected by Wilson show that the plant is extremely floriferous in its native habitat, and no doubt, when distributed, it will form an important addition to our hardy ornamental spring-flowering shrub. H. Spooner.

ODONTOGLOSSUM × KENCHII. (O. KEGELJANI × O. WILCKEANUM, VAR. MOSSIE.)

THIS interesting and beautiful hybrid has been raised by Mr. Christopher Kench, Orchid grower to J. S. Moss, Esq., Wintershill Hall,



FIG. 2.—MAGNOLIA CAMPBELLII FLOWERING IN LEONARDSLEE GARDENS, SUSSEX.

Bishop's Waltham, Hants, and is dedicated to him.

The parents were crossed in 1900, seeds were sown in 1901, and *O. Kenchii* bloomed in May, 1907. This long record is of one of the early attempts, for later crosses will bloom in a shorter period.

To clearly describe the hybrid I must first describe the pollen parent, which is probably not a true *Wilckeanum*, but a cross from *O. crispum* and *O. Wilckeanum*. In form it is much like *O. Wilckeanum albens*, but has a bright yellow ground, with rosy-tinted back; its sepals are marked with the usual blotch and two inferior large spots, also marginal spots. The petals have a few large spots loosely scattered over the median area, and the peculiar "eyebrows" of *O. Wilckeanum albens* arranged round their edges. The lip, which is oblong in form and yellow in colour, has one central large spot, and a few more below it at each side. The seed bearer was a good form of *O. Kegeljani*.

In form, the flowers of the hybrid are almost similar to the pollen parent, the segments being a little more "stalked" at the bases, as in *O. Kegeljani*.

Its ground colour is a rich chrome-yellow, with a rose-tinted back, the rose uniting with the yellow and showing through to the front. The sepals have the blotch of both parents, and some basilar marks around the column; the tips of the lower sepals are much spotted and stained; they also have the marginal spotting, though undeveloped at present. The petals have only a very few minute spots in their median areas, but the "eyebrows" are very distinct in a line of very small spots. The lip is large and oblong, white, slightly yellowish; it has a large horseshoe-shaped brown blotch across its centre, the remaining portion being unspotted. The shell-like shape of *O. Kegeljani's* lip has been overcome by *O. Wilckeanum*. The crest and column are intermediate between the parents.

This plant has not nearly attained its full development, and will be a very beautiful hybrid after acquiring greater strength. It may be termed a "sunset"-coloured flower. *O. Kegeljani* has been much neglected by hybridists, but it only needs a couple of good hybrids to appear, in order to create a sudden demand for it; the shade of yellow in its flowers is very effective, and ought not to be overlooked. De B. Crawshay.

MAGNOLIA CAMPBELLII.

THIS somewhat tender, but handsome species is of very shy-blooming habit in most districts, but especially in the neighbourhood of London; consequently, when flowers obtained from a tree growing in Sir Edmund Loder's garden at Leonardslee, Sussex, were exhibited at a meeting of the Royal Horticultural Society in April last, they created much interest. A photograph of the tree in flower (see fig. 2) has been kindly sent us by Mr. W. A. Cook, the gardener at Leonardslee, and it shows well the shy-flowering character of the species. It is the first occasion on which the tree at Leonardslee has flowered, although it is a specimen nearly 20 feet in height. In some of the warmest counties, however, it flowers with more freedom, and in a mild season a few years since, a plant in Mr. Gumbleton's garden at Belgrove in the county of Cork produced as many as 147 blooms, which opened freely. The individual flowers, one of which we reproduce at fig. 3, are globular in shape, and very delicately scented. The petals are a rich shade of rose-pink on the exterior, and creamy white inside, with marginal colour: the petals are wide and imbricate. It is a Sikkim species, and was figured in the *Botanical Magazine*, 1885, tab. 6793.

THE COUNTRY GARDEN.

ALTHOUGH wild flowers are plentiful outside the garden, yet it seems to me that nowhere is an illustration of wild gardening more suitable, artistic, or beautiful than in a country garden. There are often outlying portions that lend themselves with picturesque adaptability for this purpose, and with careful planting these wild quarters may become, as it were, beautiful "Nature" gardens, and no other portions will compare with them for ingratiating and subtle delight to those who know them. In a wild garden one loses, or should lose if it is to be worthy of its name, the sense of formality and the artificial conditions that are inseparable from the ordinary beds and borders, and gains a charming and distinct feature to act as a foil, and to enhance the charm and beautiful orderliness that is in the more prominent and formal portions of the garden. I do not think that the advantages of various special and distinct features in a garden can be too often insisted upon, and the wild portion may be made one of particular and peculiar value.

* *Dipelta floribunda*, Maxim., in *Mél. Biol.* X. (1877), p. 78.

So far as conditions go, I am inclined to think that a sparsely-wooded plot of ground is of all things to be desired; and, if there be fairly wide spaces that the sun can reach, so much larger will be the range of plants that can be grown. In planning, and in planting a wild garden, some people are too ready to consider the requirements of woodland flowering plants, and to forget the claims of plants that are sun-lovers and rock-lovers. They colonise bulbous plants, and forget how beautiful are the Rock-roses (*Cistus*) and the Toadflax (*Linaria*), and Lady's Bedstraw (*Galium*) in the wild garden where the site is open, and where, at the same time, they can be made to look in harmony and keeping with other subjects of the wild portion.

We certainly cannot afford to neglect flowering trees and shrubs here. To take but a few of our native varieties, the curious growth of Whitethorn is, quite apart from the beauty of its blossom, most picturesque. The wild Guelder Rose is charming enough at its flowering season, but every whit as pleasing when it looks like a burning bush of crimson foliage. A wild Crab Tree is a spring joy not easily forgettable; and the Spindle Wood (*Euonymus europæus*), inconspicuous so far as its blossom is concerned, yet produces seed vessels that present an unique combination of colouring, for the "arillus" is coloured brilliant orange in a setting of intense rose colour; scattered specimens of Broom and Gorze have their own value, and there are Honeysuckles and Sweet Briars!

I once saw an attempt at a wild garden that was pitiful, not because there were but few plants, but because the maker of it had been content, in the majority of cases, with just a plant or two of the different sorts. Here, an isolated stem arose of Solomon's Seal, there a single Foxglove, or a lonely Fern. No wild quarter was ever properly planted in that fashion. Nature preaches generosity, lavishness, profusion, and in planting a wild garden, it is one of the elements of success to plant with breadth and prodigality. Drifts of Wood Anemones, wide stretches of wild Hyacinths, blue masses of Violets, and these with Foxgloves, Heather, Primroses, and many another.

I am thinking, to-day, only of native plants, though a number of aliens are eminently suitable to combine and use in harmony with our own wildings, and some of these I shall hope to mention in a future article.

There are few plants more decorative in the wild garden than *Doronicum Pardalianches*. It is the latest of all the *Doronicums* to flower—this native species—so that we may count it a summer flower, and I need hardly say that it is far more difficult to have an effective summer garden where there is considerable shade to contend with, than it is during the spring. But *D. Pardalianches* will flourish under partial shade, and it has the virtue of flowering over a very long period. To all makers and lovers of wild gardens it is indispensable. It grows and flourishes almost anywhere, and the clear, bright, yellow flowers are remarkably pleasing. This plant is a wilding, and therefore we must not expect from it flowers of the size or even texture of such garden varieties as *D. plantaginum excelsum*. Let us take it for what it is—a beautiful English flower, attaining a height of 3 feet, and flowering from the middle of May well on into July.

Where there will not be the danger of it smothering other plants, a free hand can be used in planting *Asperula odorata*—the Wood-ruffe. This will grow, and not only grow but flower, under the densest shade—even the shade of a copse of Horse Chestnut trees, but I certainly would not establish it anywhere near Wood Anemones, or even Primroses, so rampant does it grow. But, where other good plants are absent, and as a splendid check to the growth of ordinary weeds, it is invaluable, and, in its flowering season, daintily beautiful to a degree. *Practical Gardener*.

ORCHID NOTES AND GLEANINGS.

ORNITHIDIUM MINIATUM.

A PLANT of this singular dimorphic species in the interesting group of rare Orchids arranged by Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White), in front of the chair occupied by the Hon. Walter Rothschild, in presiding at the Anniversary Festival of The Gardeners' Royal Benevolent Institution at the Hotel Metropole on June 26, attracted much attention by reason of its extraordinary growth, or rather its two distinct kinds of growth. The basal or non-flowering part had ordinary pseudo-bulbs and leaves, as in many *Oncidiums*, from which arose leafy growths a foot or more in height and without pseudo-bulbs, the numerous bright red flowers being produced from the bases of the leaves of the upper part of the shoot. So remarkable is the difference between the two kinds of growths that they were taken by some to be of two distinct plants potted together.

Two pretty specimens of the orange-scarlet *Dendrobium Jerdonianum*, the singular little

sent by D. Campbell Brown, Esq., Bank of Scotland House, Oban, who flowered it, and many other pretty species out of a selection sent him by a friend in Burmah.

The variety known as *D. moschatum*, the largest form, is sent by Mr. J. Barnard, Mostyn Hall Gardens, Mostyn, N. Wales. The inflorescence is nearly one foot in length, and bears ten flowers, each nearly 3 inches across, and of a pleasing nankeen-yellow colour, slightly tinged with carmine on the sepals and bearing two reddish claret blotches at the base of the downy labellum. The variety *cupreum* has flowered with Mr. H. A. Tracy, Amyand Park Road, Twickenham. Its flowers are slightly smaller than those of *moschatum*, and of a coppery-orange tint, the blotches on the lip being reddish-purple. It is allied to *D. pulchellum*, Roxb. (*Dalhousianum*), the pseudo-bulbs being often 4 to 5 feet in height. The varieties are of easy cultivation if the plants are kept in a warm, moist house while the new pseudo-bulbs are forming, and rested in a cool and dry atmosphere after the completion of growth.



FIG. 3.—FLOWER OF *MAGNOLIA CAMPBELLII*: COLOUR RICH ROSY-PINK, WITH CREAM-COLOURED INTERIOR. (For text see page 3.)

Odontoglossum stellatum, *Cirrhopetalum gracilimum*, *Bulbophyllum Lobbii*, a pretty white *Octomeria*, *Cryptophoranthus Dayanus*, with its many singular flowers; *Barkeria spectabilis*, *Hartwegia purpurea*, *Epidendrum ochraceum* and many other singular species, including several of the lesser *Masdevallias* with insect-like flowers, were also in the arrangement

DENDROBIUM CALCEOLARIA (SYN. CALCEOLUS).

FLOWERS of this pretty and variable species have been sent by several correspondents, three of the spikes representing the extreme variations which often appear under other specific names. In size and colour they are perfectly distinct for garden purposes, yet no botanical feature is present which would warrant their separation, and all have an odour like new-mown Hay, always remarked in this pretty Burman species, and which is very pronounced in the whole plant when dried.

The typical form which has flowers rather smaller than the others, and of a lighter shade of yellow, with deeper purplish markings in the calceolate labellum is

THE ROSARY.

CULTURAL NOTES FOR JULY.

JULY and August are the two most important months in the year for the propagation of Roses out-of-doors by budding, and, after the showers lately experienced, such damp conditions with warm sunshine cannot fail to produce a vigorous growth in both stocks and flowering plants. Successful budding depends in a measure on the scions being selected from well-matured flowering wood, and in like manner the shoots to be budded should be well ripened, and the bark of both should open freely. The strongest growths near the top of standard Briars should now be in a suitable condition for budding. Morning and evening are the best times for performing the operation, and if the buds are well bound with suitable material they will not readily perish. If the standard stocks are not quite ready, make a start with the seedling Briars, and, in doing so, be careful to insert the buds several inches below the ground line, and as nearly as is possible on the roots. This will largely prevent suckers springing up from the base of the stock.

Rooted Briar cuttings are also very useful as stocks, but I find they do not carry so many fibrous roots as the seedlings, nor are they quite

such good growers. To return to the standards, be careful not to shorten back in any degree the shoot or stem that is budded until there is a complete union between the scion and the stock. The bud should be inserted on the upper side of the shoot, and as near to the main stem as is possible: the effect of this will be that a more compact "head" will be formed. In budding standard Roses I favour a longitudinal incision only, in preference to the T-shaped cut, as the shoots are not so liable to break from wind or other causes. It may be found that in some cases the bark does not run freely, owing to some check in the growth, or from its being hide-bound. If such is the case, the best plan is to cut an inch or two off the end of the shoot to induce lateral growths to form later and thus cause the sap to be more active. Budding on the Manetti, multiflora, and other stocks can be proceeded with later. At

pests, such as red spider and aphids, are sure to make an appearance. These must be kept in check by an occasional syringing of clear water or an approved insecticide. All climbing Roses of the Rambler type should have their old flowering shoots cut away when blooming is over, to make room for the young, healthy growth proceeding from the base of the plants. This practice is also applicable in a less degree to the Tea and Noisette section of climbers, but the pruning should not be done so severely in their case. If they are in pots, a weak solution of guano or Clay's Fertiliser will stimulate and strengthen the new growths. Roses on their own roots and grafted Roses in pots plunged outside will only require such attention as staking, watering, &c., until the autumn, as pointed out in previous notes. All the Tea and Hybrid Tea Roses that have been forced should be allowed a similar rest to those planted out under glass, and

on the former and H.P.s on the latter stock. This procedure gives a clear gain of a season, besides the securing of some of the choicer and rarer varieties at a comparatively trifling cost. J. D. G.

ROSA RUGOSA ROSERAI DE L'HAY.

THIS semi-double, deep brick-red-coloured variety, which was raised by M. Graverian in 1902 and put into commerce by Cochet, resembles the varieties raised by Dr. Muller. The female parent was *R. rugosa rubra*. The plant is of very strong growth, and it blooms abundantly from the end of the month of May until the autumn. The blooms are 3-4 inches in diameter. As a hedge plant in the park, or alongside a path, or as a single specimen or group on turf, it would have a good effect. The flowers bear a resemblance to *R. rugosa Germanica*, but they are handsomer and of darker tint.



(Photograph by F. Mason Good.)

FIG. 4.—ROSE MADAME PLANTIER; AN EXCELLENT WHITE-FLOWERED VARIETY FOR PERGOLAS.

the time of writing these notes there is an abundant rainfall, and this will keep the sap active for a considerable time, but before the next notes are written hot, dry weather may prevail, and, if to a degree sufficient to rapidly dry the ground, or the bark of the stocks, measures must be taken to give them both a thorough soaking, and the ground a mulching of some kind a few days previous to inserting the buds. When budding, keep the ends of the shoots furnishing the scions in a can of water, and soak the bast or other tying material in water before using it. When binding the bud, take care to cover the incision thoroughly, but leave the bud itself free.

Roses that are planted out in houses must be given plenty of ventilation, and all ventilators and doors should be left open night and day. Withhold water at the roots entirely for a period of from six to eight weeks. Owing to the conditions under which the plants are grown, insect

be given water just sufficient to keep them from flagging until they are pruned. When they begin to break into growth, they should be re-potted into fresh soil. Now and onwards is a good time for persons intending to purchase Roses for autumn delivery to visit the Rose shows or large Rose nurseries. The Roses at the Temple Show formed a fine display. Amongst the best climbers were Minnehaha, Hiawatha, Kathleen, Waltham Rambler, and Dorothy Perkins. The new white Rambler Snowstorm and the Polyantha Mlle. Lavavasseur were also very effective varieties. Amongst H.P.s, Rev. D. R. Williamson and Dr. Gordon occupied high positions. There will be a good opportunity of purchasing later, at a reasonable price, strong plants of new and choice varieties in pots while the budding season is on. Each plant should have two or three well-ripened shoots that can be worked on the De la Griffierie or Manetti stocks during August: Teas

R. RUGOSA CALOCARPA.

THIS variety was raised by Bruant in 1894 from a cross made between *R. rugosa* with a variety of the Bengal Rose. The plant is an abundant bloomer, with pure rose-coloured blossoms, which are succeeded by an enormous crop of fruits which hang on the bush for a great length of time. It is admirably adapted for forming a hedge, or an ornamental specimen. *Rosen-Zeitung*, June, 1907.

ROSE MADAME PLANTIER.

OF all the newer varieties of climbing or pillar Roses, few surpass in beauty this old favourite, which is greatly admired for its pure white flowers. A reference to our illustration at fig. 4 will show better than we can describe the exceptional wealth of flowers which this Rose produces when afforded a position suitable to its requirements.

AMERICAN IRISES.

(Concluded from page 417.)

I. HARTWEGII.—This plant will challenge the cultivator's best skill and finally disappear. It is a very attractive plant, with slender leaves of a greyish tint produced in dense thickets. The flowers are 4 inches across, coloured pale yellow with lanceolate falls, horizontally poised. The standards are erect and nearly as large as the falls. The plant is capable of lingering for a few years in a pot under cool house treatment, but is quite an intractable plant in the open garden.

I. LACUSTRIS.—A small-flowered species, with broadly fan-shaped leaf clusters 6 inches high, and a succession of lilac-crested flowers that are somewhat smaller than *Iris cristata* but similarly coloured. It is pretty but very difficult to manage. It is essentially a rock plant.

I. LONGIPETALA.—This species and its variations afford a type of *Iris* that is equal to the best for cultivation in the flower border. The root-stock is a vigorous rhizome that branches freely. The leaves are 2 feet long, narrow, erect, and pointed at the tips. The flowers are borne in threes on slender, erect, rarely flexuose stems, and they are as elegant as they are beautiful. The fall petals are horizontally poised, broadly spatulate or lanceolate, and 6 inches long. The standards are shorter and narrower, and are erectly held, and the margins of both are undulating. The colour is mainly lilac, deeper as regards the standards, but the falls are paler and have a most elaborate veining of deep lilac over every part of the surfaces. There is a slight orange suffusion at the bend of the blade and some yellow down the claw. A very lovely species which must be seen to be fully appreciated.

The variety *montana* is smaller in all its parts, and the leaves are shorter. This plant is the *I. longipetala* of gardens, and the variety *superba*, also of gardens, is typical of *longipetala*. There are several forms in cultivation, but none is worthy of a distinct name. Ordinary soil and the treatment of common border plants suffices to keep this lovely *Iris* in good health.

I. MACROSIPHON.—A rare species of surpassing beauty and very variable. The leaf growth is that of *I. bracteata*, and the flowers differ only in their colour scheme and in the greater length of the falls. The stems average 9 inches in height; the flowers exceed 6 inches in diameter and vary in colour from pale to deep purple-violet in some varieties, and from lilac to buff-yellow in others. All have the characteristic long, drooping falls. It is a very difficult plant to grow successfully in a plant border, but would succeed wedged between stones on the rockery where ample drainage is possible. The variety *flava* is a pale yellow selection.

I. MISSOURIENSIS (I. TOLMIEANA).—This species is a useful and attractive plant of proved garden worth, and one that can be recommended for planting in borders. The leaves form glossy thickets, and are about 18 inches high. The flower-spikes just overtop these in early May, and produce a quantity of blooms agreeing in shape with those of *I. longipetala montana*. The falls are horizontally poised, and are coloured mainly with lilac. The general aspect of the flower is that of a poor, short-petalled bloom of *I. longipetala*, with a whitish signal patch in the paler varieties and yellow in the deeper-coloured forms. This species embraces at least 10 forms that differ considerably from each other; some are so close to certain types of *I. longipetala* that the only guide to their specific difference is their periods of flowering, which, in the case of *I. missouriensis*, is a fortnight the earlier.

I. TOLLONG is a hybrid between *I. missouriensis* and *I. longipetala*. Its flowers partake of the characters of the latter parent, but are smaller, more freely produced, and they precede *I. longipetala* in flowering by ten days.

I. PRISMATICA (I. GRACILIS).—For several years I had under cultivation a charming miniature *Iris* under this name. It has leaves just a foot high, slender, and very numerous. The flowers are coloured a clear violet as regards the falls, standards, and style branches, but the blade of the falls is contracted and coloured orange, lined with blue. *Iris graminea* is akin to this plant in habit and colour scheme, but whereas the leaves of *I. graminea* hide its flowers, the reverse is the case in *I. prismatica*, for the foliage is hidden by its flowers. A desire to increase this plant by division of the clumps proved disastrous, for the plants all died. It is a very charming *Iris*, not markedly showy individually, but the flowers are exquisitely formed and coloured.

I. PURDYI.—This is a vigorous plant of recent introduction, and one whose flowers resemble those of *I. versicolor* in shape, but are coloured a rich blue and are singularly true to colour. The leaves are slender, grass-like, erect, and are arranged in fan-shaped clusters of from 10 to 12. The stems exceed 1 foot in height, and bear several flowers each. The falls are coloured pale blue with violet margins, and a patch of white occurs at the bend of the blade. The standards are half the size of the falls, and the whole flower averages 4 inches in diameter. It is a very showy plant, easy of culture, and suitable for the plant border.

I. SETOSA (I. BRACHYCUSPIS), a native of Eastern Siberia, has one Canadian offshoot in its variety *canadensis*. The type plant has all the characters of the American group, and may fittingly be known and described with them. It has broad, deeply green leaves, produced in sturdy fan-shaped clusters; curious flexuose stems a foot high, that bear three to four flowers each, in which the standards are greatly reduced. The broadly spoon-shaped falls are drooping, and as large as a crown piece; they are coloured a rich wine purple, while the style branches have a purple-coloured median line on a greyish ground colour. The species grows well in any soil of good tilth, but it resents disturbance at its roots. The Canadian form has narrower falls, and the colour scheme is altogether paler, with a larger signal patch of white. I have not had the type from Canada.

I. TENAX.—Perhaps the most tractable, as it is the most beautiful, of all the American *Iris*es. The leaves grow in graceful tufts, and are 2 feet or more long. The rhizomes cross and recross in the manner of Twitch and take complete possession of the soil. The flowers are borne on slender and nearly straight stems, 2 feet long, and are coloured rosy-lilac, pale lilac, or silvery grey with lilac shading. The falls are sub-erect with recurving tips, and are generally one or two shades deeper in colour than the standards. The margins of all the petals are daintily waved, and there is a large signal patch of white elegantly veined with rosy-purple. This species is very variable in colour, but the form of the flower is practically the same in all. This *Iris* will grow well anywhere; the only soil it will not succeed in is one of wet clay.

I. TRIDENTATA (I. tricuspid, I. tripetala, I. Douglasii pygmaea, I. Hookeri).—A free-habited plant that grows well by the waterside or in some other damp spot. It has short tufts of deep green, and very broad leaves that are

practically evergreen. The flowers are produced in three's, from branching, well-leaved stems that just overtop the foliage, and they are coloured blue, with cloudy markings of purple on the falls. There are practically no standards, for these are reduced to tiny colourless processes. The blade is orbicular in shape, 2 inches across, and the bend of the blade and the claw is lined with purple, white, and yellow. The style branches are coloured pale amethystine-blue and they are much depressed. It is a floriferous, showy, and attractive plant, suitable for the flower border. *Iris Hookeri*, considered synonymous with *I. tridentata*, is a variety of the latter; the vegetative system of the variety is much stronger, and approaches in habit *Iris siberica orientalis*, but with no standards.

I. VERNA.—A very pretty plant that needs a marsh or a cool recess at the margin of a rock-pool for its accommodation. It has a running rhizome, greyish-green leaves and deep blue fragrant flowers, which measure about 4 inches high and possess a very remarkable throat of orange colour. It is one of the gems of the world's flora, and holds a position among grassy *Iris*es similar to that held by *Gentiana verna* among Alpine plants. It is an old plant, but still popular, and is likely to continue so as long as gardens exist.

I. VERSICOLOR.—A very variable species, whose flowers are not unknown to the English cottager. By a singular inversion of the circumstances, the variety *virginica* is recognised in gardens as the species, and *I. versicolor* is labelled as a variety of *virginica*. It is the commonest *Iris* of the New World, and extends over many of the States. The leaves are broad, handsome, and arranged in dense thickets; the flowers are produced just above the foliage on branched stems 2 feet high, each stem yielding a dozen or more flowers. These are coloured a rich wine-purple, shading to carmine at the bend of the blade, from whence a conspicuous shaft of white runs nearly to the tips. The erect standards are half the size of the falls, and they are coloured a pale claret-red. The style branches are white, suffused with pale purple. There are hundreds of forms; in fact, collected seeds yield almost as many varieties as plants: some are bad, many are good. A few have distinct names, but their seedlings may surpass them. The following are the best known varieties:—

I. V. VAR. VIRGINICA (CAURINA).—A purple-blue selection, with very large flowers: quite common in gardens.

I. V. VAR. KERMESINA.—A glorified form of the type: of a rich wine colour, heavily marked with white at the throat.

I. V. VAR. PULCHELLA.—A small habited plant, with deep violet-coloured flowers. All are free-growing plants that one can group by the waterside, in the flower border, or plant freely in the wild garden. They produce very beautiful flowers in plenty, but the easy-growing character of the plants has admitted of their being used in the most informal parts of the garden, where they are often compelled to battle with grasses for their living.

There is much to admire in American *Iris*es, and, although some are "weedy," and others difficult to manage successfully, those that are good and easy to cultivate give unlimited pleasure. Of all the *Iris*es it is my pleasure to know, those from America appeal to the artistic sense the most; they have not the stature of *Iris aurea* or *I. Monnieri*, neither have they the huge flowers of *I. laevigata*, but they have refinement, beauty of form, and artistic colour schemes that equal, if they do not surpass, any other *Iris*es in these respects. *George B. Mallett.*

LAYERING STRAWBERRIES FOR FORCING.

THE first essential for success in the forcing of Strawberries is to have strong, healthy runners, for which purpose it is advisable that a few rows of plants be grown in some open convenient position expressly for providing layers. I have for many years past forced large quantities of Strawberries, and have adopted various means for obtaining strong, thoroughly-matured crowns with more or less success. At Burghley, where the late Mr. R. Gilbert forced some thousands of plants annually, the plants were layered direct into small pots that were filled with good loam to within half an inch of their rims. The plants were afterwards transferred to 32-pots, and this was done as early in the season as possible. The results were excellent, and the practice is a common one with many growers of early Strawberries. At Longford, where Strawberries are also extensively forced, I found the runners were layered direct into their fruiting pots, and this system furnished equally good results. I have repeatedly tried the two methods, and have found that the latter system saves much labour and gives equally good plants, which thus receive no check after they have been pegged to the soil.

Last season my plants had exceptionally plump and firm crowns. They were runners from a bed in which the rows were 3 feet apart, the plants being placed 1 foot apart in the rows. The flower trusses were removed as they appeared, and the stolons were pegged direct in the fruiting pots, which were well provided with drainage and filled to within half an inch of their rims with a moderately moist and suitable compost, pressed firm. The young plants grew rapidly, and soon filled the pots with strong, healthy roots, and by the end of the season they had formed fine crowns which showed no signs of mildew, nor were the leaves spotted by disease. By the first week in July I hope to have a goodly number of our current season's plants layered, and, as far as possible, these will be layered in their fruiting pots. The pots and well-drained, and the soil should consist of a mixture of moderately heavy loam, wood ashes, a little decayed manure, and a sprinkling of soot. When filling the pots, the soil should be made firm. After the plants have formed sufficient roots they should be severed from their parents, and be stood on a layer of cool ashes in a position where the sun can reach them. During dry weather ample water, with an occasional application of liquid manure, should be supplied the roots, and the foliage should be lightly syringed. All runners and weeds should be kept in check. The variety Royal Sovereign forms the bulk of our crop, for although other varieties have been tried here, this kind, all points considered, suits us the best. *H. Markham, Wrotham Park, Barnet.*

NOTICES OF BOOKS.

FRUIT RECIPES.*

IN this comprehensive work the reader finds in condensed form almost everything that the cook, housewife, and, to some degree, the manufacturer of preserved fruit products, needs to know in reference to the preparation of fruit for the table—as sauces, jams, preserves, jellies, marmalade, pies, tarts, puddings, creams, soufflés, pickled, brandied, and spiced; as wine, chutney, as vinegar, and the thousand and one ways in which civilised mankind prepares fruit for consumption.

* By Riley M. Fletcher-Berry, The Orchard of Palms, Orlando, Florida, U.S.A. Published by Messrs. Archibald Constable & Co., Ltd., London; 4to., 340 pp. Price 7s. 6d. net. Illustrated.

Not alone do the fruits of temperate climates come under notice, but also those of the hottest parts of the world in regard to their preparation as food and table delicacies. The author also relates their contents in potash salts, proteids, carbohydrates, including sugar and starches, phosphates, acids, and water, and their uses in the economy of the human body in health and disease.

The author states in the preface that "Each fruit has a special, and some of the general values; some of them meant only as accessories to other foods, as a rule stimulants and purifiers, containing chiefly the carbohydrates, and must be balanced by fats, nitrogen, or protein, and fruits containing more cellulose. Some fruits require very little 'balancing,' being substantial and nearly perfect in themselves, as Figs, Prunes, and the Cocoonut, which last, when fresh, should be ranked rather with fruits than nuts. Of such are the Banana and the Persimmon, the Grape and the Apple." "Facts concerning the values of fruits have been widely scattered, hidden behind masses of figures, or buried in scientific works. Most of my recipes are original or long since adopted and adapted by family habit or traditions of cooking of friends Scotch, English, German, and American." The usefulness of the work cannot be over-estimated, "for the results of these investigations reach people who might never be reached in any other way, and yet influence those who have every other opportunity and scientific authority at hand, helping to simplify everyday affairs."

Most of the recipes are such as apply to American fruits or to those exotic ones that can be successfully cultivated in America. We may mention a few of the more important fruits of which recipes for preparation for the table are given, viz., Peaches (including the curious Chinese Peen-to), Pineapples, Persimmons, Mangosteen, Sapodilla, Californian Olives, Prunes, Tamarind, Stringy Mango, Northern Papaw, Loquat, Pomegranate, Apple, Pear, Quince, Currant, and Cherries. The Citrus genus is, perhaps, treated most comprehensively.

At the end of the volume are found Remington's Analyses of Fruits, also those of Wood and Bache, and several others. The book is provided with a copious index.

FLOWER DECORATION IN THE HOUSE.*

THIS book would be useful, if only for its charming illustrations of vase bouquets made of very varied materials, and which, to the number of 57, are distributed throughout its pages. It occurs to the reader that the authoress, in her distaste for the formal and the regular in arranging flowers and foliage, has adopted the fanciful methods of the Japanese, who excel in the arrangement of floral decorations in the house and in the garden. It may be hoped that these methods, with modifications, will at no distant date displace the old-fashioned style in our country. We want that which is elegant and artistic, but which, unlike the styles in vogue on the Continent, will be free from the ribbons, mirrors, and other fantastic accessories so common in some forms of decoration. The book contains descriptive matter abounding in judicious remarks that show an intimate acquaintance with the subject, and a wide knowledge of plants; of harmonies in colour and form; and of the uses of foliage and of berried plants. Many valuable hints are given, as, for instance, "no Hellebore leaves should be cut off until they are quite brown". . . "but it is a good plan to have a reserve of the wild Hellebore (*H. foetidus*) grown for the purpose of

* By Gertrude Jekyll. Published by "Country Life," Ltd., 21, Tavistock Street, Covent Garden, W.C., and George Newnes, Ltd., 3-12, Southampton Street, Covent Garden, W.C.; 98pp., quarto; price, 6s. net.

providing leaves." And, further, Christmas Roses are said to be "handsome with leaves of the Megaseas, the best of these being those of the cordifolia section." An effective illustration is one showing a vase filled lightly with Christmas Roses (*Helleborus niger*), *Pernettya* shoots loaded with berries, and *Viburnum tinus*, together with light fronds of the hardy Fern *Scolopendrium vulgare*, the Fern fronds being arranged fanwise. Among other hardy subjects, the Sweet Bay (*Laurus nobilis*), about the leaves of which the authoress is eloquent, also those of *Arbutus*, not forgetting its fruit, so useful in the winter bouquet; the evergreen Oak, whose leaves are at their best in winter, and which associate well with white *Narcissus* blooms at that season are mentioned.

For the months of January and February, we are bidden to remember the fragrant blossoms of the Winter Sweet (*Chimonanthus fragrans*). In March, attention is drawn to Lenten Roses—garden varieties of *Helleborus atro-rubens*, *H. colchicus*, *H. olympicus*, and *H. orientalis*. The colours of their flowers are not bright, but they appeal to the artist's sense of colour, and they interest and please. We are told that the stalk-ends should be "slit up about 2 inches, the better to imbibe water," as, should the stalks of wild Arum leaves. It may be said here that some white *Richardia* spathes, placed among, and ranging high above the leaves of wild Arum, form an effective illustration. Among the many handsome plants blooming in March, *Magnolia conspicua* and *Prunus Pissardi* are mentioned. The purplish red leaves of *P. Pissardi* have several uses in decorative work, and the shoots should be cut and placed in water in a warm greenhouse, where the leaf-buds will open prettily, and become ready for use in the house. Prunings of the Peach can be treated in the same manner some weeks earlier.

In this fashion the reader is taken through the entire year, so that the uses and the beauties of numerous species of plants are commented upon, and many of them shown in vases, basins, &c. In June are shown Iris blooms set off with the leaves of the Globe Artichoke, and apparently with good effects.

The Rose is naturally referred to at considerable length in July, and a variety of methods described for displaying the blooms in mixtures with other flowers or by themselves. The Rambler Roses, the Polyantha varieties, and single-flowered species as *Rosa macrantha*, are also mentioned.

Miss Jekyll's idea of showing Hybrid Perpetual Roses in a shallow bowl of water is the best that can be adopted. The flower-stalks must be cut short, and some contrivance is necessary for holding up the blooms. Those persons who rightly set high value on floral decorations in the home will not err in obtaining this valuable volume for study.

MARKET GARDENING ON LONG ISLAND.—The market gardens of the towns of Newtown, Jamaica, Hempstead, and Oyster Bay, on Long Island, have for years played an important part in supplying the Manhattan and Brooklyn markets with early Potatoes, Cabbages, Peas, Sweet-corn, Beans, Tomatos, Asparagus, Onions, Rhubarb, Beets, &c. The fertile townships of Southold, Riverhead, and the Hamptons on this island still hold their pre-eminence as the finest market gardens in the U.S.A., and an average per year of not fewer than 2,500,000 bushels of Potatoes, and 200,000 barrels of Cauliflower, 40,000 bushels of Lima Beans, tens of thousands of bundles of Asparagus, large quantities of Onions, and other vegetables; 200 to 300 tons of seeds, such as Cabbage, Cauliflower, Tomatos, &c., are sent to the New York City and New England markets. *H. J. J. Review.*

COLONIAL NOTES.

MORAEA IRIDIROIDES.

In the *Gardeners' Chronicle* for May 11, just to hand, I notice an article on *Moraea iridioides* (Linn.), and of its so-called improved variety. It may be of some interest to your readers to know more of this variety. In 1881 I was living in Inanda, 20 miles from Durban, and about 2,000 feet above sea level, I knew *Moraea iridioides* quite well, and in that year, or in the previous one, I found what I took to be a new species, the leaves and flowering stems being much longer, the habit different, and the flowers larger and more brightly coloured. I sent a dried specimen to Kew, and it appears in the *Flora Capensis* as my No. 1099. In February, 1882, I left Inanda to take charge of these gardens, bringing a plant of the *Moraea* with me. This plant and seedlings from it have been growing here for more than 25 years; they have had no special attention and have scarcely been manured. The oldest, if not the original, clump is now 3 to 4 feet in diameter, the leaves and flowering stems more than 3 feet long and quite erect. During most of the season flowers are borne in abundance, and a dried flower which I have just measured is 4 inches in diameter; the colour is as described in the article by Mrs. Richmond. Seeds of this plant have been distributed to all our correspondents—that is to most, if not all, of the leading Botanic Gardens in the Empire and elsewhere. The plants are not now in bloom as it is mid-winter here, but when flowers are obtainable, I will have a coloured drawing of one of them made natural size which shall be forwarded to the Editor. J. Medley Wood, Director, Natal Botanic Gardens. [We shall be pleased to receive the drawing.—Ed.]

The Week's Work.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq., Cobham Park, Surrey.

Tomatos.—Plants which were set out at the foot of walls in the latter end of May, and in the open garden early last month, having made new growth, will now require further tying, and to have the side shoots pinched out, keeping the plants as single cordons. Take every care to prevent the roots suffering from drought, especially those plants growing against walls, in positions that do not always get the full benefit of the rains. Where ripe Tomatos are required early in the year, seed should now be sown of any approved varieties of similar type to Winter Beauty. Shardlow and Sunrise may also be safely recommended. Sunrise, although not ripening quite so early, has free-setting qualities even during the dull days of winter. The flesh of the fruits is firm and of deep colour, just as in mid-summer.

Turnips.—As Turnip crops are soon over after they become ready for use, especially during the early part of the summer and on light soils, seeds must, therefore, be sown frequently and in small quantities. During July and the early part of August, however, seeds should be sown in greater variety and in larger quantities, because from these sowings the autumn and winter supplies will be obtained.

French Beans.—Varieties such as Canadian Wonder, also the Dwarf Butter Bean, may be sown on a warm border, or a position where it will be possible to afford them protection at night in the autumn. Plants from this sowing will yield supplies late in the season, when those in exposed situations have been cut off by early frosts.

Salads.—Seeds of Lettuce and other summer salads should be sown at this season on a north border; this position is particularly necessary if the soil of the garden is of a light and sandy nature. Sow the seeds at regular intervals in small quantities. Watering of such crops must not be neglected if the weather is dry, but if the ground was liberally supplied with manure, watering may not be required.

Clipping of hedges.—Now that the season's growth is nearly finished, the work of clipping hedges may be commenced. All the rubbish and weeds that may have accumulated should be removed, and burnt. If the box edgings were not clipped during the past month, this work should be proceeded with at once.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Coleus thyrsoides.—The young plants intended for winter-flowering should now be given a final shift, using receptacles of a size suitable for the purpose in view. A compost of two parts turfy-loam and one part leaf-soil and sand should be used as a potting medium. Do not continue the pinching of the shoots too late in the season, for this will cause the flower-spikes to be small. When the plants are established in their new pots increase the amount of ventilation to promote a robust growth, and do not crowd the plants together, but leave plenty of room between them, for their tissue is of a soft nature and easily becomes drawn and weak.

Moschosma riparium.—Plants required for decorative purposes in winter should also be repotted into their flowering-pots without delay, and after they have recovered from the disturbance at their roots, they may be placed out-of-doors for the next two or three months, but they must be placed in the plant house again before the cold weather or heavy autumnal rains set in.

Liliums.—As the earlier flowering batches of these plants come into bloom, they should be moved from the house in which they have been gently forced, to a cool and shaded house or conservatory, where the blooms will last in a good condition much longer than in a close and warm atmosphere. Any further top-dressings necessary for plants of later batches should now be applied and a stake afforded each plant as required. A selection of the latest plants should be placed out-of-doors in a position sheltered from strong winds. These will furnish flowers late in the autumn. Of the various forms of *Lilium auratum*, L. a. *Alexandrae* and L. a. *platyphyllum* are to be recommended. L. *speciosum* (*lancifolium*) has also several good garden varieties, of which the best are L. s. *album Krætzleri* and L. s. *Melpomene*.

Azalea indica.—Plants that were forced early into flower, and which were replaced in heat to complete their growths, have now matured their buds sufficiently to allow the plants to be gradually hardened and placed out-of-doors. It is possible, select a position that is partially shaded during the hottest parts of the day. Plunge the pots in ashes to keep the roots at an equable temperature and to prevent them from drying quickly. See that the soil is neither in a condition of extreme wetness nor excessively dry. If, by misadventure, a plant becomes quite dry, immerse the pot in water and stand the plant in the shade for a time. Syringe the plants thoroughly every fine evening, using occasionally some clear, diluted soot water. This will serve to ward off thrips and other insect pests, and will also furnish a manurial stimulant to the roots.

Hard-wooded plants such as *Acacias*, *Ericas*, *Epacris*, *Libonias*, and *Camellias* in pots and tubs, are all benefited by being placed in the open at this season of the year. Their foliage can be more readily cleansed when out-of-doors, and the plants are usually much harder and healthier when the time comes round for housing them again in September.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Calanthes.—The deciduous species are now making active growth. Extra care in watering is necessary for these plants that are not yet well-established, particularly those of the C. *Regnieri* section. So long as the weather continues dull, even the best rooted plants must be watered with discretion, as the compost will not dry through so quickly as it otherwise would, and if kept in a saturated condition, without sunshine, the bulbs and leaves will probably become spotted. It is a good plan to look over the plants occasionally, and place the best rooted examples together, giving them sufficient room so that plenty of light may reach to the base of each growth. Where a number of young roots appear on the surface of the compost, a thin layer of fibrous loam may be placed lightly over them, into which the roots will quickly penetrate. In preparing the loam it should be broken up into small lumps, and then have most of the fine soil removed by sifting it through a fine-meshed sieve. Keep the plants as near to the roof glass as is convenient, in order to

obtain stout bulbs and strong flower-spikes, and as the season advances, gradually accustom the most forward plants to a greater degree of light. Very little syringing or damping between the pots need be done until the weather is brighter.

Pleiones.—These are suspended well up to the light in the intermediate house, and are in full growth. If the plants are vigorous, they should be watered abundantly at the root till the foliage shows the colours of maturity, when the quantity of water should be gradually lessened. P. *humilis* and P. *Hookeræ* grow best when suspended close to a roof ventilator in the cool house; these must also be afforded enough water to keep them wet.

In the *Odontoglossum house* such charming plants as *Cochlidia Noezliana*, C. *vulcanica*, C. *sanguinea*, and C. *stricta* do best when suspended well up to the light in shallow pans, and during their period of growth require plenty of water at the root. At the re-commencement of growth the plants may be re-potted, using thorough drainage, and a mixture of peat and sphagnum-moss in equal parts, pressing this moderately firm around the plants. The dwarf growing *Promenæa citrina*, also P. *stapelioides*, and P. *Rollissonii* will succeed under similar treatment. *Aërides japonicum* and *Angræcum falcatum* should be grown in small teak baskets, providing crocks and sphagnum-moss for them to root into. Suspend the plants in a shady part of the cool house, and keep the roots moderately moist at all times. The flower-spike of the *Aërides* hangs down outside the basket, and emits a sweet, delicate odour; the pure white flowers of the *Angræcum* are also deliciously scented.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. Ford, Pencarrow, Cornwall.

Lawns.—The weather has been very favourable to the growth of the seedling grasses on new lawns. Notwithstanding the exercise of every care in the harvesting of seed, many weeds always come up with the grasses. The presence of small-growing, annual weeds is immaterial, but all the perennial weeds must now be carefully removed. This being done, roll the lawn with a roller of medium weight, and after the elapse of a few days cut the grass with a very sharp scythe. When the grass roots have obtained a good hold of the soil, future mowings may be done with the lawn-mower, provided it is in good order, but the knives must not be set to cut so low as is customary for mowing old-established lawns.

Vases.—The plants growing in vases are more likely to suffer from lack of moisture at the roots during showery weather than when the atmosphere is dry, and watering is therefore done at regular intervals. The foliage of the plants throws off the greater proportion of the rain, and, unless the rainfall is very heavy, only enough to moisten the surface of the soil will enter the vases. It is necessary to make sure that the whole of the soil is sufficiently moist for the plants' well-being. Most vase-plants will now require some manurial assistance. It is a good plan to feed them with artificial manure and diluted animal liquid alternately; when using the latter rinse the outsides of the vases with clear water immediately after the manure has been applied.

Early *Chrysanthemums.*—All the weak shoots should be removed so as to allow sufficient room for the stronger ones to develop properly. Place neat stakes to the plants, and tie them up as they grow. Neglect in this particular often means ruin to the plants when sudden winds spring up. Frequently hoe between the plants.

Campanula pyramidalis.—The seedlings which were recently pricked off will require another shift. After they have recovered from the check thus caused, transfer the boxes containing them to cooler quarters. A position in the nursery garden should be prepared for them, as they will soon be large enough to plant out of doors. The flower-spikes of the older plants may now require longer stakes.

Humea elegans.—Seeds may now be sown in boxes of fine soil and placed in a cool pit. As the seedlings germinate, they should be potted in small pots and kept in the pit. Towards the end of the autumn, let the young plants be brought into a cool house. Abundance of fresh air and careful watering are most essential in the cultivation of these plants.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq.,
Norwood, Alloa, Clackmannanshire.

Fruit trees in pots, including Plums, Cherries, Nectarines, &c., which were started in an early Peach house, will now be cleared of their fruits. The trees should be placed in a cooler house to harden them before placing them out-of-doors, where they should be plunged to the pot rims in coal ashes in a fairly open position, but one that is sheltered from strong winds. Never allow them to suffer from want of moisture at their roots; syringe the foliage occasionally to keep the plants clean and healthy. Give liquid manure occasionally to assist in building up strong wood and buds, from which next year's crop will be derived.

Later fruiting trees in pots, such as Apples and Pears, will require especial care in the matter of watering, and generally they will require watering at their roots twice daily, for on no account must the leaves be allowed to flag. Give manure water once a week, syringe the foliage daily, and fumigate the house in which they are growing occasionally. Tie up any branches carrying fruits, and do not overtax the plant by permitting a heavy crop. Afford an abundance of ventilation by leaving the ventilators open both day and night.

Melons.—Plants on which the fruits are swelling must be given an abundant supply of tepid water at their roots to prevent the foliage flagging. The water should never be applied close to the "collar" of the plants, but 6 inches distant from the stems. Water about the "neck" of the plants is often the cause of the dreaded canker and corking diseases that are so troublesome to many growers. Maintain a good bottom heat at nighttime, and especially after the borders have been well watered. Support the fruits to the trellis by suitable ties, and remove any of the young growths that are not required, but allow a few superfluous shoots to grow at the top of the plant to encourage root action. Admit air by the top ventilator only, and keep the house moist, but as soon as the fruits begin to develop colour, air may be admitted by both the top and the bottom ventilators, maintaining a dry atmosphere at a temperature of 85° by day and 70° at night.

Late Melons.—As soon as the fruits are cut from the early-fruiting plants, another batch of plants can be accommodated in the same pit for fruiting in September. The young plants should be in readiness and well rooted in 6-inch pots. It is best to entirely remove all the old soil and to cleanse the house thoroughly, using a mixture of one ounce of soft soap and one wineglassful of paraffin in a pail of hot water, thoroughly mixed before using. Make up the borders very firm with the new soil as previously advised, and place it in the form of a ridge. Plant the Melons 18 inches apart on the ridge, stake and tie them, and when all is finished give a good watering with tepid water. Keep the atmosphere of the house close and damp, and spray the plants overhead both morning and evening. Admit a little air at nighttime to prevent the plants becoming drawn during hot weather.

PUBLIC PARKS AND GARDENS.

By W. W. PLETIGREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

Notice boards are unfortunately a prominent feature in most of our public parks, as printed notices are often needed to direct visitors to various parts of the grounds and to warn them against the infringement of the by-laws. Few objects in a park give occasion for so much adverse criticism as do the usual inartistic type of notice boards with their monotonous reminders. The appearance of an entrance to many a pleasure ground is greatly marred by the number of different notices exhibited at it. Even these do not appear to be enough for the purpose, as one can scarcely get away from notices of some kind or another in any part of a park. While park officials are generally aware of the fact that these boards do not add to the beauty of their surroundings and do their best to limit the number of them, they know too well that notices are essential for the protection of park property and the maintenance of proper order and conduct among certain classes of visitors. The stereotyped notice "Visitors are warned that they must not pluck the flowers in the park" may appear to be an absurd and needless warning to

place in any public garden, yet it is the one most frequently required. Well-educated and apparently intelligent women are frequently detected stealing flowers and plants in parks in every part of the country, and when questioned invariably declare that they did not think they were doing any harm. The absence of notices is one of the first excuses a culprit makes use of when caught infringing a by-law.

Notice of by-laws.—The notice which invariably occupies the most prominent position at the main entrance to a park is a large copy of the general by-laws. As this contains so much reading matter it is quite impracticable to have it inscribed upon zinc or linoleum by a sign writer, so it has to be printed on paper and afterwards pasted upon the board.

Printed notices.—The fact of these notices being printed on paper makes it difficult to maintain them in a clean and readable condition. We have tried all kinds of methods of dealing with them, but the result has always been the same. Although the paper is sized and coated with the best outside oak varnish, they are in use for a few months only before they become unsightly and require replacing. The humidity of our climate seems to have a very bad effect on the paper used for printing purposes. We have tried zinc sheets between the paper and the wood of the notice board, and have also used a covering of glass, but all to no purpose; and we have at last been compelled to adopt what, I believe, is a common practice of having a duplicate set of boards always in readiness to take the place of others as they become unrepresentable. Whoever may discover a cheap method of treating paper in such a manner that it can be kept in good condition in the open air for any lengthened period will undoubtedly earn the gratitude of everyone who has to deal with this question.

Ordinary park notices can now be had ready printed on enamelled iron plates, and they are very much neater and cleaner in appearance than the old wooden ones. So long as the enamelled surface does not chip, these plates last for years without so much as needing a coat of varnish. With the exception of these and the by-laws, the notices generally required in a park can be printed by an ordinary painter with the aid of stencil plates. It may seem paradoxical to say so, but it is well to have notices as unobtrusive as possible. Dark coloured boards—say, black or dark green—with white lettering are preferable to those painted white with dark lettering.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to LORD CLINTON, Bicton,
East Devon.

Ripening fruits must be protected from the birds, or they will destroy a large portion of the crops of Currants, Gooseberries, Cherries, &c. The Strawberry crop is maturing very slowly, and many of the fruits have rotted on the ground. No Strawberry plantation should be retained after the fourth season of cropping. The most satisfactory method of renewing the Strawberry beds is to plant a given number of rows each year, and destroy a similar number of the old ones as soon as the fruits are harvested. In netting fruit trees on walls, forked sticks placed at convenient distances and about 6 inches in length will keep the net away from the face of the wall. Place the forked end of the stick outwards to hold the net in position.

The fruit room should have a thorough cleansing. Limewash the walls and scrub the woodwork with soapy water. Keep the structure fully ventilated, so that all may be sweet and clean by the time the first fruits are gathered.

General observations.—Now that the superfluous lateral growths have been shortened on trained trees, one can the better estimate the amount of the crop on each tree, and manurial aid can be given accordingly, feeding only those that are carrying fair crops of fruit. A second thinning of the fruits is necessary in the case of some varieties of Plums and Apples, and, in a few instances, of Pears: this should be done without delay, as extra fruits cause an unnecessary strain upon the tree. There has been no great amount of heat to dry the soil, except in the case of trees occupying warm sites against walls, and the need for mulchings has therefore not been

great; but mulching has this advantage in wet weather, the manurial properties get washed down to the roots of the trees. The rains have lessened the labour of syringing the foliage compared with that of last season, but what has been saved in this direction is more than lost in the constant use of the hoe and rake necessary for the removal of weeds.

Grapes out-of-doors.—One sometimes meets with a vine in the open that is carrying a fair number of bunches. To thoroughly ripen these a warm summer is essential, and it is necessary to thin the berries and set aside any leaves that unduly shade the bunches. Keep all subsequent growths pinched at the first joint; secure each shoot to the trellis, and assist the roots with a stimulant when watering is found to be necessary. In a season like the present one mildew causes much damage: on its first appearance dust the foliage and fruits with flowers of sulphur, which can be removed again by syringing 24 hours after its application. It may also be added dryness at the roots is a frequent cause of mildew, so that extremes either way favour the spread of the fungus.

THE APIARY.

By CHLOIS.

The busiest season of the year is now with us. The supers have been placed on the hives, and these will need close attention. When the sections or shallow frames are about two-thirds full another set must be placed below the first super, as a delay in this respect will cause the bees to swarm. This process is termed "tiering." It is best performed about midday, when the bees are abroad gathering nectar, for there will then be fewer bees to disturb at home. Care must be taken not to spill the honey when moving the frames, for carelessness in this respect may be an incentive to robbing.

Preparation for swarming.—Hives should be fitted up to receive swarms, if the beekeeper be desirous of extending his apiary. The frames in the brood chamber should be fitted with "starters," that is a strip of comb about an inch or so in depth. Too much care cannot be taken in making these "starters" secure in the top bar. Failure in this respect may cause the whole to slip later, and then the bees will build comb in all directions. Sections fitted with full sheets of foundation, or, better still, shallow frames with drawn-out comb, should be put in the hives, for by these means all the honey will be readily harvested by the beekeeper, and the practice will leave plenty of space at the bottom parts of the hive for brood-rearing. Bees in their first season rarely build drone comb. They always fill themselves with honey before swarming, and this they convert into wax, for in a condition of nature, they commence house-keeping in an empty space such as a hollow tree. Further, when no full sheets of foundation are placed in the brood chamber the bees are practically compelled to store in the supers.

To prevent swarming.—Some time ago an experimental friend of mine placed an extra brood chamber below the one in use in a hive, took out the queen from the frames above and placed her on the added frames, and prevented her from returning by a sheet of "queen excluder." As the brood hatched out of the old brood frames the bees filled them with honey. A stronger colony it would be hard to imagine, but the queen was a good one, and in her second season.

Artificial increase of stocks.—Those persons who are desirous of increasing their stocks artificially may do so with every reasonable hope of success. The present time is the most successful for queen-rearing.

Casts.—It is useless to keep "casts." Take out the queen or queens (for casts often contain several queens, I have seen as many as five) and destroy them if they are not required, and place the workers in the hives from which the bees issued.

Extractor.—See that the extractor is cleaned, fitted up and in perfect order so that no time may be lost in emptying the shallow frames when they are full.

No honey should be extracted from combs which are not sealed, because the honey under these conditions is watery, and has not that full flavour which is found in fully ripened, that is, sealed, honey.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the **PUBLISHER, 41, Wellington Street, Covent Garden, W.C.**

Letters for Publication, as well as specimens and plants for naming, should be addressed to the **EDITOR, 41, Wellington Street, Covent Garden, London.** Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, JULY 6—

Soc. Franç. d'Hort. de Londres meet.
German Gard. Soc. meet.

TUESDAY, JULY 9—

Roy. Hort. Soc. Summer Exh. at Holland Park (2 days).
Wolverhampton Fl. Fête (3 days).
Roy. Scottish Arbor. Soc. Exh. in Edinburgh (4 days).
Cambridge Fl. Sh.

WEDNESDAY, JULY 10—

Tunbridge Wells Fl. Sh.
Croydon Fl. Sh.
Brixton, Streatham and Clapham Hort. Soc. Sh. (provisional).
Bath Rose Sh. (2 days).
Southend-on-Sea Fl. Sh.
Newcastle-upon-Tyne Fl. Sh. (3 days).
Lee, Blackheath & District Fl. Sh. (2 days).
Hereford & West of England Rose Sh.

THURSDAY, JULY 11—

Addlestone, Chertsey and Ottershaw Fl. Sh.
Potters Bar & District Rose Sh.

SATURDAY, JULY 13—Woodbridge Fl. Sh.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—62.3°.

ACTUAL TEMPERATURES:—

LONDON:—Wednesday, July 3 (6 P.M.): Max. 58°, Min. 49°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, July 4 (10 A.M.): Bar., 29.6; Temp., 59°; Weather—Overcast.

PROVINCES:—Wednesday, July 3 (6 P.M.): Max. 57°, Oxford; Min. 52°, Ireland W. coast.

SALES FOR THE ENSUING WEEK.

WEDNESDAY, THURSDAY AND FRIDAY—

First portion of the "Woodlands" collection of Orchids at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

The Gardeners' Benevolent.

As we were able to announce in our last issue, the Gardeners' Royal Benevolent Institution has this year raised a sum of nearly £2,500 by means of the annual festival dinner. It being the first occasion on which the event has been so successful there is every reason for congratulation, although the circumstances are not so favourable as to warrant a feeling of entire satisfaction. This would only be possible if the Executive Committee were placed in such a position that it could safely advise the subscribers to elect as pensioners all deserving candidates who have applied for relief. That this is not the case at present was very clearly demonstrated by the honorary treasurer and chairman, Mr. Harry J. Veitch, whose excellent speech contained statistics and information that clearly affected the feelings of those present.

The Hon. Walter Rothschild, M.P., who presided at the dinner, made a sympathetic speech, in which he remarked upon the duty of garden proprietors, to help this

Institution in making some provision for those gardeners who in their declining years may need assistance. The study of flowers and fruits, he said, conduces to some of the most charming amenities of life, and in such studies, as also in the enjoyment of the products of the garden, the gardeners were their willing and enthusiastic ministers. Having related that the Institution was established in 1838, Mr. Rothschild said since that year it had distributed a sum of £113,000. There are now 227 persons receiving permanent relief, and, in addition, considerable sums are distributed each year by the Victoria Era and the Samaritan Funds. All the expenses of management are defrayed by the dividends and interests arising from the invested funds. Mr. Rothschild thought it very satisfactory that so large a sum as £1,500 is raised annually from subscribers, but, notwithstanding this fact, there remains a sum of £2,500 to be raised each year by other means. Similar societies are more numerous than formerly, and it is not found that the number of supporters of such charities increases in equal proportion, but, said Mr. Rothschild, he earnestly hoped that the 29 candidates now before the Committee would not be allowed to wait for longer than candidates had done in former years.

In responding for the Institution, Mr. Harry J. Veitch stated some particulars that ought to be made known to all gardeners who at the present time can afford to support this charity, but who may in future years need assistance from its funds. In the first place, however, he thanked the chairman for his presence there that evening, and for the help he had afforded the Institution, remarking that the Hon. Walter Rothschild was the fifth member of the family who had attended the annual festivals. Proceeding to speak of the Institution, Mr. Veitch said he had been intimately connected with it for more than twenty years, and he could assure his hearers that it is doing excellent work. At the commencement there were only two pensioners, now there are 227 receiving permanent relief, including 126 men and 101 women. The oldest pensioner is a woman aged 95 years, who was elected on to the funds in 1885, in succession to her husband, who had paid £35 to the Institution in annual subscriptions. Husband and wife together have received relief amounting to £395. The pensioner who has been longest on the books is also a woman, and her age is 89 years. Her husband had previously been helped to the extent of £304, and the widow herself has received £344, making a total of £648. The two widows mentioned are still drawing their pensions. At the election in January last, 20 pensioners were elected, their average age being 70 years, and among these were several candidates who had been in good circumstances, proving, as Mr. Veitch remarked, that poverty affects all classes, and it is frequently caused by circumstances over which those who suffer the consequences have little control. The Institution does not, as a rule, afford permanent relief to candidates under 60 years of age, but exceptions are made in specially necessitous instances; thus, in one case, a pensioner who is 54 years of age is suffering from paralysis, and another 55 years is totally blind.

That the help afforded the pensioners is appreciated by the recipients, Mr. Veitch showed, by reading, as he has on many former occasions, a few extracts from letters received by the Committee from those at present enjoying relief. Nothing could be more conclusive than the evidence thus afforded of the amount of misery and want that is ameliorated by the pensions from the Institution, the details so disclosed being sufficiently pathetic to affect all who are not callously indifferent to the sufferings of others. After reference had been made to the continued benevolence of Mr. N. N. Sherwood and other friends, and to the excellent work which is done by the local auxiliaries, Mr. Veitch, referring to the future, pointed out that there are now 30 candidates awaiting election, and that the Committee had never yet been able to elect more than 20 pensioners at one time. If these 30 cases were placed on the funds, it would involve an annual expenditure of £588, and it must be further noted that the Institution would incur an obligation for the remainder of each candidate's life. It is impossible for the Committee to undertake this responsibility at present, and it is feared there will be many disappointed candidates at the election in 1908 unless the income of the Institution can, in the meantime, be increased to a considerable extent. As showing how much easier the lives of the pensioners become when they are partially relieved of anxiety concerning the necessities of existence, Mr. Veitch said that one pensioner, when elected, was over 70 years of age, and his medical attendant had stated that it was impossible for him to live for many months, yet he lived to the age of 103 years. The pensioners have, on many occasions, shown that they are perfectly honest in the acceptance of help, one of them having actually contributed towards the funds when circumstances had again placed him in a more favourable position. Only last year a pensioner wrote to the Committee renouncing the pension, because he thought that his circumstances were no longer so necessitous as those of some candidates still awaiting relief. Mr. Veitch closed a most effective speech with the exhortation, "Let us leave an example that those who must fill our places sooner or later may emulate—and surpass."

Mr. Stuart M. Samuel, M.P., proposed the toast of "Horticulture in all its Branches," making a humorous speech, to which the Right Hon. Colonel Lockwood, M.P., responded.

The Secretary, Mr. G. J. Ingram, subsequently announced the donations and subscriptions. These included, amongst others, an annual subscription of five guineas from H.R.H. the Prince of Wales, 100 guineas from the Chairman, 100 guineas from Messrs. N. N. Rothschild and Sons, £225 from Norman C. Cookson, Esq., £225 from Messrs. Sander and Sons, £200 from Messrs. Sutton and Sons (also £50 to the Samaritan Fund); from the friends connected with Covent Garden, etc., per Mr. Geo. Monro's list, £137 11s., and Mr. R. F. Felton's list £120.

It is encouraging to know that so deserving an Institution has such good friends, many of whom come forward year after year and afford help to the utmost limit of their power.

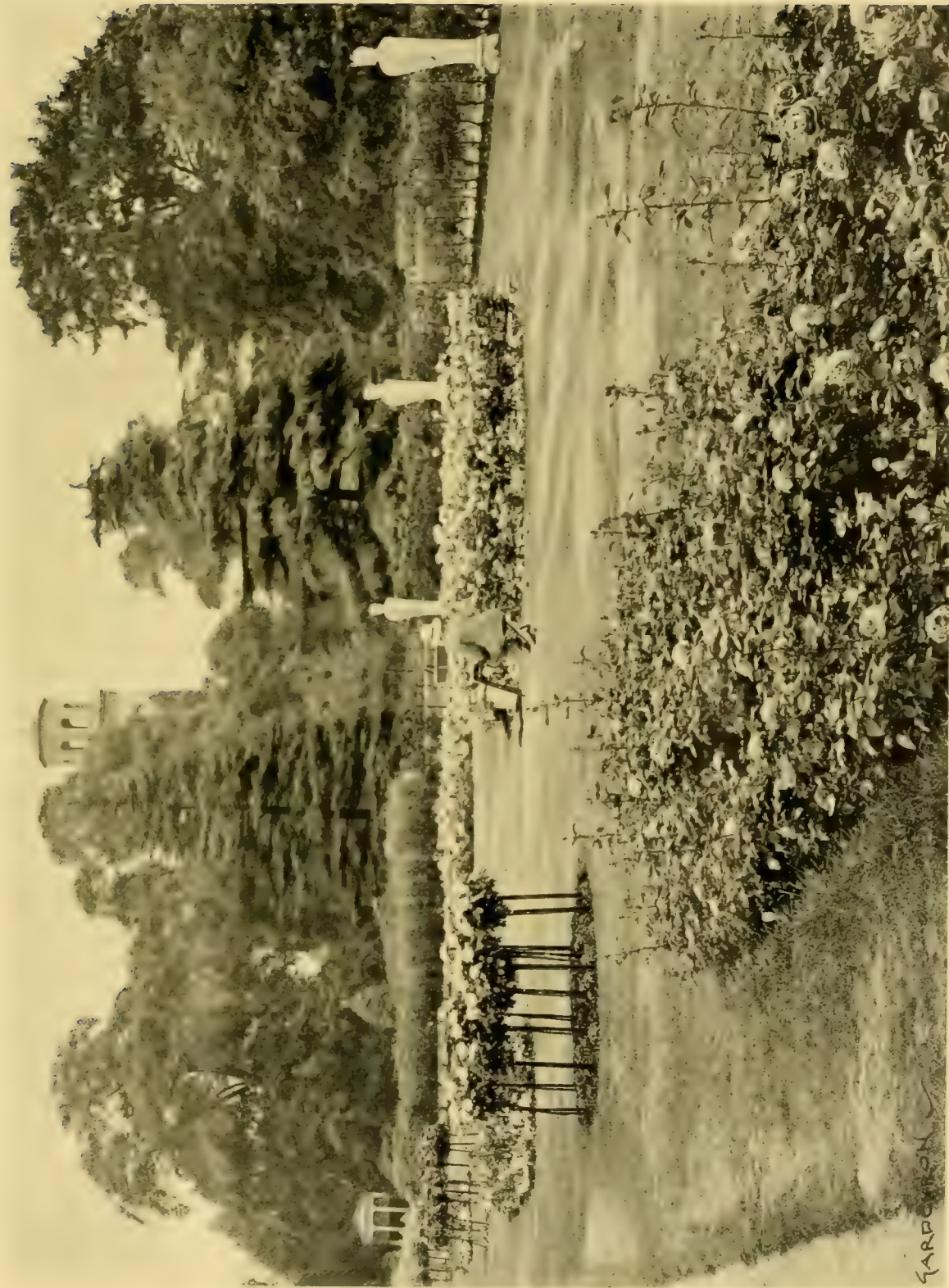


Photo by E. J. Wallis.

ROSE-TIME AT KEW.

OUR SUPPLEMENTARY ILLUSTRATION depicts a portion of the Rose Garden near to the Palm House in the Royal Gardens, Kew. The variety in the foreground of the illustration is Dupuy Jamain, a vigorous Hybrid Perpetual Rose, having rich, cerise-coloured flowers. Next is a bed of standard plants of the variety Baroness Rothschild, a rose-coloured flower shaded with white. The large round bed near which an artist is seated contains the Hybrid Tea variety Caroline Testout, which is considered by many cultivators to be the finest Rose ever raised. Caroline Testout is a Rose that may always be seen at exhibitions of this flower, and as a garden Rose it has few equals. The other round bed in the distance contains Mildred Grant, a variety remarkable for the large size of its flowers; these are blush-white, tinted with pink. At Kew it is the practice to plant Violas to carpet the Rose beds during the first year after the Roses are planted, and occasionally the Violas are repeated in the second year. The third and fifth beds on the left in the illustration are planted in this manner. When Violas are thus employed it is necessary to study the colours of the flowers of both the Rose and Viola for each particular bed, and in some instances the young foliage of the Rose has to be borne in mind. One of the best effects this spring was obtained by growing Viola Duchess of Sutherland, lavender blue flowers, as a groundwork to the Rose Marianne Pfitzer, the young foliage of which has a decided bronze tint.

THE HOLLAND PARK SHOW.—The Royal Horticultural Society will hold its summer show in the park adjoining Holland House, Kensington, on Tuesday and Wednesday next. The Fruit, Floral, and Orchid Committees will meet at 11 o'clock a.m., and the exhibition will be opened at 12.30 p.m. The special silver cup given annually by N. N. SHERWOOD, Esq., will be awarded to the best collection of herbaceous and bulbous plants. Members of the various committees and other invited guests will be entertained by the council at luncheon at 1 p.m. By kind permission of MARY Countess of ILCHESTER, the beautiful private gardens will be open to the public, who will be charged a small admission fee for the benefit of the gardening charities. We hope that the weather will be brighter than it is at the time of writing, and that the exhibition will be attended with marked success.

BRITISH GARDENERS' ASSOCIATION.—We are informed that a meeting of the Executive Council of this Association was held at the Royal Horticultural Hall on June 25, Mr. W. H. DIVERS in the chair. A vote of condolence was passed with Mrs. MASTERS and family on the death of the late Dr. MASTERS who had taken a keen interest in the association from the beginning. Mr. CHAS. FOSTER, University College Gardens, Reading, was elected chairman for the ensuing year, and Mr. DIVERS vice-chairman, the last-named being accorded a hearty vote of thanks for his services during the past year. Fifteen new members and one apprentice were elected. Messrs. WATSON & CASTLE were elected to the Publication Committee. The question of having a paid secretary was again discussed, but no definite action was taken.

THE SOCIETY OF ARTS will hold a conversazione, by arrangement with the council of the Royal Botanic Society, in the gardens of that society, Inner Circle, Regent's Park, on Tuesday evening, July 9, from 9 p.m. to 12 o'clock.

EXAMINATION IN HORTICULTURE.—The Report of the Annual Examination in the Principles and Practice of Horticulture, held on April 10 last, by the Horticultural Society, has just been published; 150 candidates entered. Three hundred marks were allotted as a maximum. Twenty candidates, or nearly 14 per cent. of the whole

number, were placed in the first class. Fifty-nine, or about 40 per cent. of the whole, were placed in the second class. Sixty-three, or a little over 44 per cent., were placed in the third class. It is noticeable that the successes of the first class are nearly double those of 1906—13.8 per cent. (1907), 7 per cent. (1906)—while the second class has decreased from 50 to 40 per cent. The third class is nearly stationary. The examiners in their report make the following remarks:—"With regard to the papers on the Principles of Horticulture, many of the answers were extremely good, but too many candidates gave an account of assimilation in error for respiration; and in replying to the question in the divisions, gave merely the distinctions between the classes of Dicotyledons and Monocotyledons, which was not asked for. It is to be regretted that Darwin's mistake as to the 'injuriousness' of self-fertilisation still holds its ground, though it has been shown to be not true to nature thirty years ago. With regard to the Practice of Horticulture, with a few exceptions the candidates answered the questions fairly well. None of them obtained the maximum number of marks. Many candidates started well and obtained the maximum number of marks in the first or second questions, but fell off towards the third and fourth. There are about 26 minutes allowed for each question, and if the eight questions were apportioned into 26 minutes each, a more uniform degree of merit would be obtained. Allusion has been made in previous years to the candidates introducing irrelevant matter into their answers, but there is not much reason for comment on this point in the present examination. The main cause of failure has been the spending of too much time on the first questions and failing for want of time towards the end. In two or three instances three questions were answered well, and then a very poor attempt indeed made at a fourth, evidently owing to want of time."

THE KING'S BIRTHDAY HONOURS.—It is satisfactory to find that the importance of science is acknowledged in the recent list of Birthday honours, and that Professor RAY LANKESTER, LL.D., F.R.S., has been created a Knight Commander of the Bath. There are several names more or less intimately known in horticultural circles. Among these may be mentioned Mr. WILLIAM HENRY DUNN, Sheriff of the City of London and a member of the governing body at the Royal Botanic Society, who receives a knighthood. The list of appointments to the Imperial Service Order include the names of Mr. CHAS. JORDAN, superintendent of St. James's, Green, and Hyde Parks, and Kensington gardens; and Mr. CHARLES EUSTACE PILLANS, horticultural assistant Department of Agriculture in the Cape of Good Hope Colony. Many of our readers know Mr. JORDAN intimately, and will receive the news of the honour now conferred upon him with pleasure.

SIR JOSEPH HOOKER, G.C.S.I., C.B., F.R.S., &c.—Our readers will join us in congratulating Sir JOSEPH DALTON HOOKER, on the attainment of his ninetieth birthday on Sunday last, June 30, and in his appointment on that day by H.M. the KING to the Order of Merit. An excellent portrait of Sir JOSEPH HOOKER was published in a supplementary illustration to our issue for January 7, 1905.

HUNGARIAN FRUITS FOR THE ENGLISH MARKET.—Our cultivators of hardy fruits are promised further competition in the shape of preserved Plums, Apricots, Peaches, Tomatos, etc., in the course of a short space of time. The secretary of the Royal Hungarian Museum in London has already entered into communication with important manufacturers and wholesale merchants with the objects of ascertaining their wishes, sorts of fruit preferred, and value.

SECRET COMMISSIONS.—We are informed that at a meeting of the Council of the Secret Commissions and Bribery Prevention League, held on July 2 at the London Chamber of Commerce, Sir EDWARD FRY was elected as first president, and the Archbishop of CANTERBURY, Earl FORTESCUE, Lord AVEBURY, Sir W. H. HOLLAND, Sir W. MATHER, and Mr. DAVID HOWARD were elected vice-presidents. Mr. DAVID HOWARD, who presided, was able to report that the League had made considerable progress, and was obtaining an increasingly influential membership. Mr. R. M. LEONARD has been appointed secretary. The offices of the League have been removed to 3, Oxford Court, Cannon Street, London, E.C.

FRANCO-BRITISH EXHIBITION, 1908.—A deputation of the French Agricultural and Horticultural Committee of this proposed international exhibition arrived in London on June 30. The deputation consists of the president, M. VIGER, Senator, and formerly Minister of Agriculture; M. TRUFFAUT, vice-president of the French National Society of Horticulture; M. SENER, formerly president of the Agricultural Machinery Society; M. CHATENAY, general secretary of the French National Society of Horticulture; M. GUILLAUME, architect to the Committee; and M. MARTEL, who is attached to the Department of the Minister of Agriculture. The deputation is visiting London with the object of completing all the details for the collective participation of French agriculturists and horticulturists in the Franco-British exhibition which will be held next year. A special committee, composed of agriculturists and horticulturists of England and France, will undertake the organisation of the agricultural and horticultural sections of the exhibition.

AGRICULTURAL EDUCATION.—The Departmental Committee, of which Lord REAY is Chairman, held meetings on the 18th, 19th, and 20th inst., Lord BARNARD presiding in the absence of the Chairman at the Hague Conference. The following witnesses attended and were examined:—Mr. W. A. SIMMONS, estate agent, Reading; Miss EDITH BRADLEY, late Warden, Studley College, Warwickshire; the VICE-CHANCELLOR and Professor WEISS, Manchester University; Mr. H. HAMEL-SMITH, late resident in the West Indies; Mr. C. N. P. PHIPPS, Chairman of the Agricultural Education Committee of the Wiltshire County Council; Mr. W. McCracken, agent to Lord CREWE; Mr. C. H. EADY, land agent, Lockinge, near Wantage; Professor T. W. CAVE, F.R.C.V.S., South-Eastern Agricultural College, Wye; Miss MILLER, Farnham; Sir JOHN MACFADYEAN, Royal Veterinary College; Mr. J. PETER, Berkeley, Gloucester; Rev. J. B. MCLELLAN, Principal of the Royal Agricultural College, Cirencester; Mr. W. P. WRIGHT, Lecturer in Horticulture, Kent County Council.

— At further meetings on June 25, 26 and 27, the following witnesses attended and were examined: Mr. W. J. GRANT, Director of Agricultural Education, Monmouthshire; Sir JOHN COCKBURN, K.C.M.G.; Mr. P. ALLTOFT, Instructor in Agricultural Processes; Mr. CHAS. SHEATHER, F.R.C.V.S., Master of the Farriers' Company; Mr. GEORGE LANGRIDGE, late President of the 'Surveyors' Institution; Mr. W. GOARING, Horticultural Instructor, East Sussex; Professor CAMPBELL, Department of Agriculture and Technical Instruction for Ireland; Mr. JAS. MACDONALD, Secretary, Highland and Agricultural Society of Scotland; Mr. W. H. DUNN, Chairman of the Berkshire County Council; Mr. J. C. DREWITT, West Sussex County Council; and representatives of the Dauntsey Agricultural School, Wiltshire, and of the Swanley Horticultural College, Kent.

FLOWERS IN SEASON.—Mr. AMOS PERRY, Hardy Plant Nursery, Enfield, sends a hybrid *Heuchera* with white flowers, named Perry's White. The variety has red or pink stamens, and a very large inflorescence.

EUROPE AND THE FAR EAST.—Mr. A. UNGER, of the firm of Messrs. L. BOEHMER & Co., Yokohama, Japan, writes us as follows:—"This is to inform you that we received to-day (May 28) your papers dated April 27 and May 4. They reached us by the 'Empress of China,' and made the trip from London in 22 days, a record mail, which we think will be interesting to your readers, as it proves that the communication between Europe and the Far East is being improved, especially now that a connection has been made via Siberia. It is possible for us to leave Yokohama, and arrive 18 days later in London."

THE KEIFER PEAR.—It is stated by a market orchardist in *The Canadian Horticulturist* for June that it "is not in so good demand as it used to be," and he is, therefore, grafting *Duchess d'Angouleme* on his trees of Keifer, and in the last two years he has grafted 2,000 trees with this variety. The *Duchess* is more free from blight than almost any variety of Pear, bears regularly, and ships well to Europe.

HAY CROPS AND THE ABSENCE OF SUN.—In view of the unsettled character of the weather, and of the consequent difficulty in securing the hay crop, the Board of Agriculture draw the attention of farmers and others to the system of ensilage as a means of conserving crops of Grass and Clover. Copies of leaflet No. 9, which describes this process, may be obtained post free and free of charge upon ap-

plate, and it may be purchased smooth or ribbed as may be desired. The wire causes only the smallest shade on the plants beneath the roof. The extra cost of the article is inconsiderable, and reckoning the durability of wired glass, it is said to be the cheaper in the end. The raising of the warmth of the interior of a wired-glass-covered house is rather longer in point of time by sun-heat; on the other hand, the house parts with its heat more slowly, and those dangerous and sudden changes of temperature experienced in ordinary houses are avoided.

Publications Received.—*Flower Show Fixtures for 1907*, from Messrs. Austin & McAslan, Glasgow: a folded card containing the dates of horticultural exhibitions, chiefly those which will be held in Scotland.—*Report (Annual) of the Botanic Garden Syndicate*, being a report of the work done in the Cambridge Botanic Garden.—*Field, Paths and Green Lanes*,



FIG. 5.—A PERGOLA OF ROSES IN THE ROYAL GARDENS, KEW. (See p. 13.)

[Photograph by C. P. Raffill.]

THE GERMAN ARBORICULTURAL SOCIETY.—Professor SCHWAPPACH, master forester, has been appointed vice-president of this society (*Deutschen Dendrologischen Gesellschaft*) in the place of Prof. PRITZER, deceased.

ANDRE LAURENT.—We note the death, at Limoges, at the age of 82 years, of this famous raiser of new varieties of Lilac, Clematis, and fruits.

PROFESSOR DR. KARL MULLER.—We regret to announce the death, on the 13th inst., of this professor of botany at the Horticultural Institution, Dahlem, and Dean of the Technical High School at Charlottenburg, at the age of 51 years. The deceased was for many years Dean of the Berlin Agricultural High School.

plication to the Secretary, Board of Agriculture, 4, Whitehall Place, London, S.W. Letters of application so addressed need not be stamped.

WIRED GLASS IN THE ERECTION OF GLASS-HOUSES.—This material for roof-glazing is coming much into use in Germany. It is described as possessing many advantages over ordinary glass, either rough or ribbed plate, and polished glass, in its capability of withstanding hail, wind pressure, blows, and atmospheric influences, most important facts for gardeners. The wire network is incorporated with the glass whilst the latter is in a fluid state; and the transparency of the material is not influenced thereby, it being as transparent as ordinary rough

Edition V., by Louis J. Jennings. Published by John Murray.—*Summer Holidays*, by Percy Lindley. This is a handbook issued by the Great Eastern Railway Company, and describes some of the more interesting features in the less known districts of East Anglia, and in the country between the Cromer coast and the Norfolk Broads. It is an attractive little book, and is freely illustrated, many of the illustrations being reproduced in colours.

KEW NOTES.

GARDEN ROSES.

[SEE FIG. 5 AND SUPPLEMENTARY ILLUSTRATION.]

WHEN the *Rhododendrons* have passed their best at about the middle of the month of June the *Roses* claim more attention perhaps than any

other subject grown in the open-air at Kew. During the month of July the larger number of visitors who walk amongst the beds is sometimes evident in the bare patches to be seen on the lawns where the grass has been much trodden.

Few of the persons who admire the beautiful Roses have any idea of the amount of labour expended to obtain these results. To name only one item will suffice. The soil in which they grow has all been obtained from a distance. A few inches below the surface of the ground at Kew the soil, except in one or two restricted areas, is practically pure sand. This has been dug out to a depth of about 2 feet and replaced with the top-spit from old pasture land now being built on at Hounslow, Willesden, &c.

In gardens where there is ample space for the growing of Roses, as at Kew, it is better to restrict each bed to one variety. The effect

the newer Hugh Dickson (both good as standards), Merveille de Lyon, Ulrich Brunner, Victor Hugo, Mrs. John Laing, and its blush sport Mrs. H. W. Sanford.

The Hybrid Tea Roses being more robust in growth, and quite as free-flowering and fragrant as the tea-scented varieties, their great popularity is not surprising. During recent years they have been planted largely at Kew. Especially worthy of mention are Augustine Guinoisseau, Captain Christy, Caroline Testout (good both as a standard and bush), Clara Watson, Frau Karl Druschki, which is the best white Rose for any purpose; Gloire Lyonnaise, Grace Darling, Gustave Regis, Killarney, La France, Madame Abel Chatenay, a very distinct and pleasing Rose, especially in the bud; Madame Ravary (orange yellow), Marquise Litta, Mrs. W. J. Grant (syn. Belle Siebrecht), and Viscountess Folkestone.

to respond most readily at Kew to this treatment are Clio, Dawn, Frau Karl Druschki, Gloire de Dijon, and William Allen Richardson. Another Hybrid Tea which resents hard pruning is Grüss an Teplitz. If allowed to grow naturally, merely cutting out the old wood when the bushes become too thick, this Rose is a gem for massing on the outskirts of the Rose garden and in the pleasure grounds.

Climbing and rambling Roses are also well represented on the Pergola (see fig. 5) near the Rockery, in the Rose Dell near the Pagoda, and in numerous beds in various parts of the grounds. Many are at present in flower, while others, only now in bud, will prolong the flowering season for some time to come. *D. D.* [An excellent Hybrid Perpetual Rose is Pride of Waltham, of which an illustration is given at fig. 6. It has a good habit of growth, and the flowers are of large size, with petals of much substance; colour, pale pink, shading to rose.—*Ed.*]

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

STRAWBERRY KENTISH FAVOURITE.—By a rather limited vote an Award of Merit was granted to this Strawberry by the Fruit Committee of the Royal Horticultural Society at the meeting held on June 25 because it was claimed for the variety that it was very early in fruiting. It was also agreed to ask for plants to be sent to Wisley Gardens later on for trial there in comparison not only with Royal Sovereign, but also with other well-known varieties. It is most important that the Royal Horticultural Society's gardens should be used to the utmost for trials of this description, especially as the soil and position of these gardens suits Strawberries, as well as many other plants. *A. Dean.*

STRAWBERRY, THE LAXTON.—Although this variable Strawberry has been condemned by some growers as useless, and in certain seasons and districts it has undoubtedly proved disappointing, compared with the promise of its early years, yet very favourable results are still obtained at times. This season, for instance, I have had a good crop of extremely fine fruits from plants in a rich, deep loam, and so satisfactory has the variety proved that it will be still kept on trial. Gathering was commenced about the same time as from Royal Sovereign, the fruits were nearly as large, of handsome conical shape, rich in colour, and of capital flavour for an early variety; much superior in that respect to the variety mentioned, distinctly suggestive of King of the Earlies and Vicomtesse H. de Thury, though these are two of The Laxton's remotest ancestors. I have never remarked before the characters of Sir Joseph Laxton so strongly developed as in this year; in some of the fruits before they were fully ripe these were most conspicuous as regards form and colour, and it was not easy to distinguish the two varieties by the fruit alone. It was one of the main points the raisers had in view, namely the production of an early Sir J. Laxton on account of the valuable firmness of the latter's fruit. The extraordinary variability of some Strawberries in different seasons and distinct soils is most puzzling, and is a subject that would be well worth careful investigation. Heavy losses are occasionally experienced by purchasing largely of varieties that have grown exceedingly successful in some districts and in particular years. This makes growers for market very cautious about investing in novelties, and consequently very slow advance is made. The mistake to my mind is that most growers wait until the varieties are obtainable in large numbers instead of testing the most promising novelties for themselves on a moderate scale, using them as soon as they are sent out. *Lewis Castle.*

SAXIFRAGA AIZOON ROSEA.—An error has crept into my note (see p. 418) on this plant. At the eighth line from the end, "the purplish colour of the petals" should read "the purplish colour of the peduncles." This colouring of the stems is very pronounced, and gives an added beauty to a very desirable plant. By raising seedlings from this plant, flowers of a deeper or richer tone of colour may probably be obtained. *E. Jenkins.*



FIG. 6.—ROSE PRIDE OF WALTHAM, COLOUR PALE ROSE.

obtained from a dozen or fifty Rose plants of one variety in a bed is more pleasing than when a number of sorts are planted in the same bed. It is better to limit the number of varieties grown than to cultivate a large collection and thus spoil the effect. The varieties grown at Kew are selected as far as possible for their free-flowering qualities and good habit.

Most of what may be termed the garden Roses are grown on either side of the path on the outskirts of the Italian Garden, and at either end of the Palm House. The Hybrid Perpetual varieties found to succeed the best at Kew include such well-known varieties as Alfred Colomb, Baroness Rothschild, Camille Bernardin, Captain Hayward (a perfect bedding Rose), Countess of Oxford, Duke of Edinburgh, General Jacqueminot, Margaret Dickson, and

Tea Roses, being of more moderate growth, are grown at Kew in rather smaller beds on the inside of the path previously mentioned. Some of the best sorts are Anna Olivier, Corallina (rosy-red), one of the best Tea Roses of recent introduction; G. Nabonnand, Hon. Edith Gifford, Jean Pernet, Madame Lambard, Maman Cochet, and Princesse de Sagan.

Several varieties of extra vigorous growth are grown on the pegging-down system, that is, instead of the usual practice of shortening back all the growths, the vigorous young shoots are bent down and fixed in this position by the use of pegs. Only the weak shoots and the older wood are cut out in spring. Many more flowers are obtained from a bed of Roses treated in this manner than it is possible to get from plants pruned in the ordinary way. The varieties found

SUMMER PRUNING OF FRUIT TREES.—I should have imagined that the results following the summer pruning of fruit trees in the open were sufficient to show the benefits of the practice. Mr. Castle (see p. 424, vol. xli.) asks for proof that by summer pruning ordinary woodbuds become converted into fruit buds the following year. Their formation in the form of imperfect fruit spurs the following year certainly furnishes ample proof. The initial change or process of conversion seen in these basal woodbuds after the pruning the first year, must be followed by the completion of the conversion the second year into perfect fruit buds before the actual results can be seen, and in such results is the practice of summer pruning fully justified. When these wood shoots, ordinarily pinched, or cut back at some period of growth during the summer, are not so treated, but are left to make their full season's wood growth, they are, as is common practice in such cases, cut back to one or two buds in the winter. Not fruit buds or spurs, but mere wood shoots are again formed, and so the process of wood production goes on. That is not fruit production or proper culture. If the hypothesis in relation to the practice of summer pruning be wrong, then all our practice is folly. It is odd that whilst in relation to wall trees, espaliers, or cordons, no one seems to question the value or necessity of summer pruning, the present discussion is apparently made to relate to bush or pyramid trees only. At least, I assume so much. There is one thing which it would be interesting to learn, and the results of the experience of the many able cultivators of fruit who annually report on the condition of the season's fruit crops would be specially helpful to that end if they would state whether in reference to, say, Apples and Pears, the trees which, not the one year alone, but habitually, give the best crops are those on which summer pruning is practised or not. A trial of the practice of summer pruning fruit trees might well be the subject of experiment at Wisley, as opposed to mere thinning on, say, 12 trees of any one or more varieties. Of course, different results might be obtained in diverse soils and situations. Still, it is an experiment which should be conducted. It does not follow that because a practice is not only common, but very widely regarded as essential, it is therefore absolutely right. It may be wrong, but proof that it is wrong is needed, and so far little seems to have been forthcoming. The greater number of the replies printed in these pages were favourable to the practice. Many of the subjects discussed in lectures and papers to-day have much less practical value to gardening than has that relating to the merits of summer pruning and non-summer pruning of fruit trees. *A. Dean.*

—During the summers of 1905 and 1906 an espalier tree of Winter Nelis Pear, trained on a south wall, was selected by me for an experiment in summer pruning. The first season the shoots were allowed to grow until July 20, when they were cut back in the usual manner. The result was a moderate formation of fruit spurs or flower-buds. At the commencement of June, 1906, the side shoots were pinched back with the thumb and finger, which treatment was continued throughout the summer. The result of this treatment, so far as the production of fruit spurs is concerned, was highly satisfactory, for the tree this season was covered with blossom. I am firmly convinced that the judicious stopping of the shoots acts as a material aid in the production of fruit spurs. *C. R., Herts.*

SWEET PEA COUNTESS SPENCER.—This variety seems to be producing more surprises this season in the shape of progeny with new colours. I am sending you a few of those at present in flower in my garden, all of which show the true characteristics of the Countess Spencer type, viz., the large wavy standard, large wings enfolding the keel, and the straight and open keel. The variety Countess Spencer resulted from a cross effected between Prima Donna and an unfixed seedling in 1899. The raiser was Mr. Silas Cole, Althorp Park Gardens, and seeds were put in commerce before the variety was fixed. This, and the fact that some seeds of another variety were accidentally mixed with it, would account for the appearance of these so-called sports. There can be no doubt that these sports are the result of cross-

fertilisation, and until recently I imagined that they must all be the result of Mr. Cole's crosses, but I am now of the opinion that, owing to this flower possessing an open keel and protruding stigma, cross-pollination may be effected by other than human agency. The Countess Spencer type of flower is not so readily self-fertilised and consequently is the more easily cross-fertilised than the older type of flower. *Hugh Aldersey, Aldersey Hall, Cheshire.* [Exceptionally well-cultivated flowers of the Countess Spencer type accompanied this note.—ED.]

THE CULTIVATION OF GLADIOLUS.—In dry, light, or sandy soils, in addition to well-decayed stable dung being dug into the soil previous to planting, abundant moisture should be afforded in the absence of heavy rains during the active season of growth. The quantity of moisture should, however, be lessened or discontinued before the flowers appear, a short period of ripening being beneficial if not too severe; this causing greater firmness in the tissues and thereby flowers of better quality and durability. Excessive succulence is not beneficial to plant, flower, or corm. *F. M.*

THE WEATHER OUTLOOK.—"Winter lingering chills the lap of May," wrote Oliver Goldsmith 150 years ago, or thereabouts. Had Goldsmith lived in these days, he might easily have extended his poetical remarks to the whole of the month of June. As regards Plums, Pears, and Apples, I mention them in their order of flowering. There may be a few fruitful trees here and there, especially in favoured localities, but, from what I learn, these fruits throughout the country are practically a general failure. A redeeming point may, however, be found hereabouts in both black and red Currants, and, if seasonable summer weather should set in quickly, there may also be some Strawberries. Last year the Oaks in this district suffered severely from the leaf-devouring larvæ of the moth *Tortrix viridana*; there were but few Acorns. This year the trees are again being quite denuded of their leaves by the same plague. The present season is one rampant with weeds of all sorts. Crops, such as Barley and Wheat, have, in many instances, a starved appearance, and the fields are overgrown with Charlock (*Sinapis arvensis*). With a view to killing the flower to prevent the ripening of the seeds, I saw some fields being sprayed with a chemical mixture; in another some men were engaged with knives cutting off the flower-heads for the same end. Grass is everywhere abundant, but is spoiling for the want of cutting, which is being delayed by the wet. Turnips, Mangolds, Beet, and Carrots all stand in need of warm sunshine. Last year at this time the crops were suffering from drought, when springs and streams ran low. This year they are all running full. Notwithstanding the fruitless state of some of our orchards, all shrubs and herbaceous plants have done well in this rainy season. My Laburnum Adamii has flowered splendidly, considering it is a young tree. It has now five well-developed branches of *Cytisus purpurea*, and more are forming. It also has 55 handsome racemes of *Laburnum vulgare*—some on the lower part of the tree, some in the middle, and some quite at the top, besides some hundreds of the curious bronzy-coloured flowers of *L. Adamii*. *W. Miller, Berkswell, June 25.*

A ROCK GARDEN AT BASTON MANOR.—I recently visited the gardens at Baston Manor, Hayes, where many of the plants seen are direct introductions from their natural habitats, having been collected and sent home by the late Capt. Torrens during his travels abroad. They have been planted as nearly as possible under the same conditions as they formerly enjoyed. The centre of interest is the rock garden, and here many interesting plants were noted in flower, including a large number of Saxifragas. *Veronica rupestris* and *Gypsophila prostrata* made a pretty display. *Iberis sempervirens* and *I. gibraltarica*, *Aster alpinus* and *Erigeron* species were all seen in their best condition of flowering, whilst *Aubrietias* in several of the best varieties formed a bank of colour. *Saponaria ocyroides* has flowers a pretty shade of pink. The deep purple coloured flowers of *Ramondia Nathaliae* showed well against the white of the *Iberis*. Other plants in flower at

the time of my visit included *Lithospermum prostratum*, *Lychnis viscaria*, *Achillea aurea*, *Erodium geranioides*, *Coronilla minerva*, *Gnaphalium aureum*, *Cheiranthus mutabilis*, *Pyrethrum argenteum*, *Haberlea rhodopensis*, *Geranium sanguineum*, *Achillea* species, *Ramondias*, and a host of other pretty flowering plants. *Adiantum pedatum* in large clumps was very pretty. Among other plants in this beautiful garden may be mentioned the Japanese Tree Pæonies, and climbing Roses. *A. H.*

BONES FOR A VINE BORDER.—I have lately had occasion to move a portion of a vine border that was formed more than 20 years ago, and in which a liberal quantity of half-inch bones had been introduced. They did not seem to have decayed, nor had the vine roots embraced them in a single instance. Every person who writes on vines and the composition of a vine-border invariably recommends half-inch bones as one of the ingredients. I fail to see what good purpose this expensive article serves in a compost for vines. *W. P. R.*

HARDY AND YELLOW RHODODENDRONS.—In reference to Sir Herbert Maxwell's criticism of my opinion of the hardness of *R. arboreum* (p. 374) I may say that we have tried, at Bagshot, many of the Himalayan species he mentions, and have found none of them to be perfectly hardy, *R. barbatum* being the most promising. In speaking of the hardness of many plants, however, it is almost impossible to say which are hardy or otherwise unless they are tested, but I have noticed that in districts which are subject to late spring frosts many plants cannot be grown to such perfection as in places where a low May temperature is rare. I consider this district to be one of the coldest south of the Thames, especially during the spring, 6° to 10° of frost having been registered here about the middle of May for the past four or five years in succession. I agree with Sir Herbert Maxwell that the Rhododendrons he mentions are worth growing, but I should advise anyone to test them first, as it is not so much the amount of cold that causes the injury as it is the time of year when it is experienced. Mr. Ryan takes me to task for stating that no hardy yellow hybrid Rhododendron has yet been raised, and cites a plant that, from his description, is *R. campylocarpum*, a true species from Sikkim, and which I mentioned as one of the plants from which a yellow hybrid might in time be used. *R. campylocarpum* we have found to be tender here. *R. Smithii aureum* is certainly a dull, yellow-flowered plant, but this is a semi-deciduous hybrid raised from a seedling Rhododendron and *Azalea sinensis*. It is not a very handsome plant nor one that is likely to become very popular. *J. Clark, Bagshot, Surrey.*

ROSE.—I am sending some single, Apricot-pink coloured Roses. I have never had this variety before; it has appeared as a climbing Rose for the first time in my collection. I cannot account for its appearance, unless it be a sport of the Carmine Pillar Rose, of which I have a number of plants. It may perhaps be a reversion to some ancestral form of the Carmine Pillar Rose. Is this variety known elsewhere? If so, how did it originate? *E. Bonavia, M.D., Westwood, Richmond Road, Worthing, June 27, 1907.* [We do not recognise the variety from the specimen received, of which the petals were already falling. It does not, however, appear to be of the same type as Carmine Pillar.—ED.]

RHODODENDRON PURITY.

No hardy shrubs are more handsome in their season of flowering than the Rhododendrons, whilst the plants being evergreen are objects of beauty at other seasons of the year, and especially in winter, when their fine, bold foliage affords a touch of colour to the shrubbery, and furnishes a pleasing contrast to the deciduous shrubs around them.

Our illustration (see fig. 7) is a plant of the variety Purity growing in a Donegal garden. The snowy-white trusses of flowers, each with a faint yellow "eye" are very distinct in appearance. The variety is amongst the best of the light flowered forms, and is a favourite in gardens.

MARKET GARDENING.

TOMATOS.

CONSTERNATION was written on the faces of the many market growers of Tomatos when for mid-June the record low price of 3s. 6d. per dozen pounds was returned for their fruits. Beyond the large supply from the Channel Islands, there was no apparent cause for this low price. Trade was bad certainly, due, the shopkeepers affirm, to the inclement season.

Against this the fact must be recorded that the present weather is against a quick ripening of the fruits inside the plant houses. As I write (at the end of June), prices have gone up 1d. per pound, which is a good thing for the growers, fuel being so dear.

Points to be strictly observed in marketing if best returns are sought are honest packing, with full weight, and all fruits should be coloured. The prices ruling at the Borough and the Brentford markets are similar to those of Covent Garden, which may be said to rule prices generally.

accommodated for a large portion of the year are small in berries and have no "bloom," showing the absolute need for special treatment in order to obtain the best results. Gros Maroc has been seen all through the month of June, but beyond its good appearance, this is not a Grape of high quality thus early in the year.

Black Alicante always commands a certain trade, and the samples are very good for this early season.

Muscat of Alexandria, at prices of 1s. to 5s. per pound, correctly represents the difference in the value of the samples.

Very few high-class bunches are to be seen. The Guernsey-grown bunches are now of better colour, but they are very small.

Canon Hall Muscat from Guernsey is seen, but is not remarkable in quality. In addition to the above kinds of Grapes, there are some Gros Colmar from Worthing, but not of much worth. Belgium growers are also sending a few Black Hambros.

Trade is about the average for the season, and with the "small fruit" season at hand, prices will not improve. *Stephen Castle.*



[Photograph by Miss Wallace.]

FIG. 7.—RHODODENDRON PURITY, FLOWERS WHITE WITH A YELLOW "EYE."

This refers also to the farther Manchester centre, for the prices are telephoned from each market, and should they be high at the cotton centre, Covent Garden supplies are transferred to Manchester by the truck load.

The glass area devoted to the market culture of Tomatos is this season in excess of that of any previous year, and thus it is not likely that high prices will be maintained before the advent of the outdoor crop.

Plants in cold houses are not doing well; sun is greatly wanted.

GRAPES IN JUNE.

THE consumption of fruit is always greater in hot weather, and the present unseasonable weather is checking the demand for both indoor and hardy fruits. Strawberries are now in season, and Cherries from Kent are in; consequently, there is a less demand for Grapes. Black Hambro is generally realising from 10d. to 1s. 6d. per pound, but I know of more than one grower who is realising 2s. 6d. per pound for his bunches. There always is a demand for good bunches weighing 1 lb. and over, bunches that can be used with effect on the dessert table. The bulk of this variety that comes from the Channel Islands, while good in colour and size of berries, is particularly small in the bunch. Bunches from vineries in which plants are

F.R.S. The announcement was received with great pleasure by the committee.

Sweet Peas and the Mendelian Laws.—Mr. R. H. BIFFEN showed a very interesting series of Sweet Peas to illustrate the discoveries so far made in regard to the laws of inheritance as exhibited in these plants. The great majority of crosses and so on had been made by Mrs. BIFFEN. The following were included in the series.

(1.) Cream crossed with white gave all white (i.e., white dominant over cream). In the second generation from these whites self fertilised, white and cream varieties were produced in the proportion of three white to one cream. The cream breeds true in the following generation, but only one in three of the whites is pure, the remaining two again producing creams.

(2.) White crossed with white in the first generation gave a Sweet Pea approaching Painted Lady in type. The seeds of this, by self fertilisation, gave Painted Lady and white in the proportion of nine of the former to seven of the latter, showing that one white parent carries a certain factor, the other, another, which meeting produce the red colour. In the third generation the whites breed true and one of the reds.

(3.) White \times blue in the first generation gave purple, and in the following generation purple, blue, white, and Painted Lady. The parents thus carry the two red-producing factors whose existence is demonstrated in the cross between the two white Peas mentioned above. Where these meet in the presence of the blue colour, purple is formed, but in its absence Painted Lady. Seeds of the purple varieties may reproduce the whole colour series again, those of the Painted Lady, white and Painted Lady only. The white varieties breed true, but blue may throw white.

(4.) Cream with purple Picotee edge \times Mont Blanc (white) gave purple and in the second generation cream, white, cream with Picotee edge, white with blue edge, Painted Lady and purple. The character producing the Picotee is dominant over the non-Picotee. The parents carry the factors for red demonstrated in the case of the cross between the two white varieties, which on meeting give Painted Lady. In addition to these characters there are yellow and white, the former being recessive to the latter. Non-Picotees breed true to this character. Picotees breed true in the proportion of one to three. Thus a Picotee white may throw Picotee white, Picotee cream, plain white and plain cream, but a plain cream will breed true from the outset.

(5.) Eric Hinton (pink, with waved standard) \times Hon. F. Bouverie (pink, with buff tinge due to the presence of yellow chromoplasts, standard not waved). In the first cross the colour of the flowers was deep rose, similar to Prince of Wales, and all had flat standards, in the second the flowers were yellow, pink, and buff with flat standards, and yellow and pink with waved standards. Waved forms had not so far occurred in buff colours.

(6.) Bouverie (pink and cream) \times Navy Blue gave in the first generation purple. In the following generation segregation into purple, pink, pink with cream, cream and tinged white occurred, and each of these types may or may not be flaked.

(7.) If this be compared with the results obtained by crossing another pink with Navy Blue, the same colours are produced, but no flaking occurs owing to the absence of the determining factor in one of the parents.

The series demonstrated the possibility of predicting the colour of the offspring in the second generation of any particular cross with great certainty, and showed the facility with which any particular two characters may be combined in any plant. In answer to questions, Mr. BIFFEN said that it was impossible to say beforehand in the case of two whites whether or not they carried the colour-producing factors. This could only be determined by experimental crossing. Several members remarked upon the desirability of trying the effect of crossing the wild Sweet Pea of Sicily with some of those known at present. A hearty vote of thanks was accorded to Mr. BIFFEN for his exhibit and explanatory remarks.

Improved Clover.—Rev. Professor HENSLAW showed on behalf of Mr. A. G. LEIGHTON, of Newcastle, Staffs, specimens of Mr. LEIGHTON'S

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

JUNE 25.—*Present:* Mr. E. A. Bowles, M.A. (in the chair), Prof. G. Henslow, Prof. G. Boulger, Rev. W. Wilks, Messrs. Cuthbertson, Odell, Güssow, Shea, Worsdell, Worsley, Bennett-Poe, Douglas, Masee, Pickering, Holmes, and Chittenden. Visitors, Mr. and Mrs. Biffen.

The late Dr. Masters.—The Chairman read the following letter from Mrs. MAXWELL MASTERS:—"Mrs. MAXWELL MASTERS and her daughters wish to thank the members of the Scientific Committee for their very kind and much valued sympathy with them in their irreparable loss. The Scientific Committee and its work were always of the deepest interest to its chairman, and the fortnightly meetings formed one of the most agreeable interludes in his busy life."

New Vice-Chairmen.—Rev. W. WILKS announced that the Council had that day resolved to appoint Messrs. J. T. BENNETT-POE and E. A. BOWLES to fill the vacant places caused by the loss the committee and the society had sustained through the lamented death of Dr. M. T. MASTERS, F.R.S., and Professor MICHAEL FOSTER,

Improved Clover. Mr. LEIGHTON wrote: "The form which I have produced assumes a more permanent character than the commercial plant. This qualification of permanency was the condition required; for that derived from commercial seed appeared to run through the cycle of life during one summer; this having been brought about by the system of producing seed for sale during the first year, the consequence being an annual tendency which by this continued selection becomes fixed and hereditary. I find that the period of life may be shortened in *Trifolium medium*, which brings with it more seeding capabilities combined with succulency and size of foliage. In like manner I find that *T. pratense* can be made more permanent, and this permanency brings with it a more procumbent habit, less succulency and size." The matter of Clover standing over the first winter becomes a question of national importance; farmers appeared to have a good plant at autumn, but the following spring all the Clover had gone. This was attributed to Clover sickness, but the fungus which is said to produce the trouble accompanies the death of most annuals, therefore we may rightly say, Clover sickness was merely a fungus which accompanied the death of the plant.

The experiment conducted at Harpur Adams College, Newport, proves the truth of our investigations. A six-acre field was divided into three sections of two acres each.

Two acres, plot 1: ordinary commercial seed from seedsmen No. 1.

Two acres, plot 2: seed of plants referred to above.

Two acres, plot 3: ordinary commercial seed from seedsmen No. 2.

At harvest, the first autumn after sowing, when the cereals were cut, and for some weeks after on plots Nos. 1 and 3, a good amount of Clover was present. On plot No. 2, although the plant could be seen, it was small (not advanced in growth), but during December, January, and February, plots 1 and 3 appeared to lose plants with a black mould prevalent upon the plant. No. 2, as growing weather came along, showed evidence of great vitality, and produced a magnificent crop of red Clover. In the other plots, although the same quantity of seed was used, Clover almost entirely died out during the winter months. Several members demurred to the statement that the fungus (*Sclerotinia trifoliorum*), which so frequently appears connected with dying Clover, accompanied the death of most annuals, and the committee desired to hear the result of other experiments upon the plants. A hearty vote of thanks was accorded to Mr. LEIGHTON.

Abnormal Cabbage.—W. MARSHALL, Esq., sent a Cabbage from the leaves of which numerous cup-shaped growths had arisen, many upon long stalks taking their origin in the midrib of the leaf. The monstrous condition of Mignonette referred to by Professor J. HENSLOW (*Trans. Camb. Phil. Soc.*, vol. v.) appears to present a similar phenomenon.

Carnation flowers rotting.—Flowers of Carnation were received which had rotted at the base of the petals, and had large black masses (*Sclerotia*) among the decayed portions. The trouble was due to the growth of the fungus *Botrytis cinerea*, which had found congenial conditions for its development between the closely packed petals of the flower.

Double *Miltonia vexillaria*.—In reference to this flower shown at the last meeting from Baron SCHRODER, Mr. WORSDELL reported that it was a good case of true doubling in which the column was split up, the stamens and carpels had become petaloid so as to form three or four extra whorls of petals (labella on one side of the flower, ordinary petals on the other side), while the outer whorls of the flower were quite normal.

Sporting *Coleus*.—Mr. DIVERS showed a large *Coleus* having branches bearing at least five variations in the markings and colouration of the leaf different from those appearing in the first formed shoot. It is rare that so many sports are to be seen upon one plant.

Plane diseased.—Shoots of Plane (*P. acerifolia*) were shown from Romsey by Mr. ODELL which looked as though they had been injured by frost, but which had been attacked by the fungus *Gloeosporium nervisequum*, and this had caused the destruction of the shoots.

LINNEAN SOCIETY.

JUNE 20.—The President read a letter congratulating Sir J. D. Hooker on his sixty-five years of Fellowship of the Linnean Society, and the approaching completion of his ninetieth year, which was signed by the Fellows present.

An acknowledgment from the principal secretary of H.M. the King of Sweden, in reply to the telegram sent on June 6 on the occasion of his golden wedding, was read by the general secretary.

Mr. W. C. Worsdell, F.L.S., exhibited some remarkable cases of carpeloidy of the inner stamens of *Papaver commutatum*, selected from a bed of plants at Kew so labelled, with one specimen of *P. orientale* showing the same peculiarity of separate carpels surrounding the capsule.

The first paper was by the late Dr. Maxwell T. Masters, F.R.S., "On the Distribution of Conifers in China and neighbouring countries," which was briefly explained by Dr. Rendle.

Mr. J. Stanley Gardiner then laid before the meeting a group of papers on the collections of H.M.S. "Sealark."

A paper by Mr. and Mrs. Clement Reid, "On the Pre-Glacial Flora of Britain," was read in title.

Mr. E. A. N. Arber's paper on Triassic species of *Zamites* and *Pterophyllum*, in the absence of the author and at his request, was read in title.

Dr. Rendle gave an account of the plants collected on Mt. Ruwenzori by Dr. A. F. R. Wollaston (1906); from the paper by Messrs. E. G. Baker, S. L. Moore, and A. B. Rendle.

The plants from the Ruwenzori range were collected from two camps—one at about 3,500 feet above sea-level on the south-east slopes of the range between the mountains proper and Lake Ruisamba; the other at 6,500 feet in the Mubuku Valley on the east side of the range. Expeditions were made to intermediate and higher altitudes, the highest camp being at about 12,500 feet, whence plants were collected up to the snow-level at about 14,500 feet on the east side. The time of year was January to July. Dr. Wollaston gives notes on the vegetation at different altitudes from 3,000 to 15,000 feet, and has brought back some photographs showing the nature of the country and different aspects of the vegetation. The plants at the lower elevations include some common tropical weeds, with a fair percentage of more localised species and some novelties. Cultivation ceases above 7,000 feet, and at from 7,000 to 8,000 feet is found the largest forest of the range: a large *Dombeya* is noticeable, and one of the finest trees is a *Podocarpus*. Above 8,000 feet the forest thins out, and is gradually replaced by a belt of small tree-heaths and *Podocarpus*. The Bamboo-zone begins on the east side at about 8,500 and continues up to 10,000 feet. The big tree-heaths begin at about 9,500 feet, at which level a number of terrestrial Orchids were found, with numerous Ferns. From 10,000 to 11,000 feet moss is plentiful on the ground and trees forming cushions 2 feet deep: here were found two tree-Lobelias. In the next thousand feet *Helichrysums*, Lobelias, tree-heaths, and tree-Senecios are the most conspicuous plants. The heaths cease at about 12,500 feet, but the Senecios continue almost to 14,000 feet. Another Lobelia appears at about 12,500 feet, and is found on the steepest slopes almost to the snow-line. *Helichrysums*, sometimes forming bushes 4 or 5 feet high, grow luxuriantly. A small *Arabis* was found at 14,000 feet, and a rush, a grass (a new species of *Poa*), and mosses were found growing up to the level of permanent snow.

Mr. E. G. Baker, Prof. Dendy, Mr. N. E. Brown, and Mr. J. Stanley Gardiner joined in the discussion which followed.

RICHMOND HORTICULTURAL.

JUNE 26.—The above society's annual exhibition of plants, Roses, and other cut flowers, table decorations, bouquets, fruit, and vegetables was held in the Old Deer Park, Richmond, on this date. The society embraces the districts of Richmond, Twickenham, Isleworth, Mortlake, East Sheen, Kew, Petersham, Ham, Barnes, and Roehampton. The exhibits were arranged in three large marquees and one smaller tent, and an inspection of the exhibits could be made under comfortable conditions.

GROUPS AND PLANTS.

For a group of plants occupying an area not

exceeding 100 square feet there was good competition; the plants consisting of ornamental foliage and flowering subjects. The first prize was taken by Sir C. SWINFEN EADY, Oatlands Lodge, Weybridge (gr. Mr. J. Lock), with a display that was not crowded, yet rich in colour and variety. The plants included *Liliums*, *Dendrobiums*, *Oncidiums*, *Francoa*, *Ixoras*, *Carnations*, *Clerodendrons*, *Humeas*, *Gloxinias*, *Cannas*, *Caladiums*, and some fine double-flowered *Clarkias*; 2nd, Mr. W. VAUSE, Nurseryman, of Leamington, Warwickshire.

Mr. VAUSE was the winning exhibitor in a class for six Palms, with tall (10 to 12 feet), fairly well-grown plants, but rather lacking in robustness, and showing the effects of wear.

In the class for a smaller group (the area filled not exceeding 60 square feet), the best exhibit was shown by C. M. BARTLETT, Esq., Uplands, East Sheen (gr. Mr. Hicks), the plants employed consisted chiefly of *Hydrangea Hortensis*, *Clerodendron fallax*, some tall *Codiaeums* and diverse small foliage plants, together with a central Palm and an edging of *Panicum* and *Caladiums*; 2nd, Lady WAECHTER, The Terrace, House, Richmond (gr. Mr. H. Burford), with a group in which *Lilium longiflorum*, *Carnations*, *Gloxinias*, pink Roses, *Caladiums*, with rather tall Palms as a background, formed the major part.

The class for a basket of mixed flowering and foliage plants brought three contestants, and the first prize was taken by Mr. Jas. Lock, gr. to Sir SWINFEN EADY; *Clarkias*, *Crassulas*, and *Oncidiums* were the chief flowering subjects used, and *Adiantums*, *Codiaeums*, and *Caladiums*, the foliage plants.

The best six exotic Orchids were shown by H. LITTLE, Esq., Baronshalt, Twickenham (gr. Mr. A. Howard). The exhibit included some well-flowered *Laelio-Cattleya* G. S. Ball, a *Cypripedium superciliale*, with 12 blooms, *Cattleya Mendellii*, with a fine strong truss of five blossoms, *Laelia grandis tenebrosa*, and others. Mr. W. VAUSE was awarded the third prize.

Groups of *Streptocarpus* were shown in bloom by three exhibitors, and the first prize was taken by Mr. T. J. Wheeler, gr. to W. A. STEARNS, Esq., The Lodge, Englefield Green, with plants of large size, having finely coloured flowers in distinct shades; 2nd, G. ATKINS, Esq., East Sheen (gr. Mr. W. J. Hill).

Excellent *Caladiums* were shown by Mr. H. HICKS in large, well-coloured plants, and he was awarded the first prize in a class for six of these plants.

The first prize for six plants of *Coleus* was taken by Mr. H. HICKS with large, compact examples; 2nd, Mr. T. COOPER, whose plants were equal in colour and development to those in the first prize exhibit, but less regular in size.

The schedule provided a class for six fine foliage plants distinct. S. H. PHILLIPS, Esq., Teddington Hall (gr. Mr. Clarke), showed the best examples, amongst which were fine *Asplenium viviparum*, *Neottia nidus avis*, and *Adiantum concinnum*.

In a class confined to gentlemen's gardeners for six *Adiantum* Ferns, Mr. W. H. CLARKE, gr., Teddington Hall, was first for capital specimens that varied from 2 feet to 4 feet in diameter; Mr. A. Allum, gr. to LIONEL WARD, Esq., Petersham House, won the second prize with smaller specimens. The best single-flowered tuberous-rooting Begonias were displayed by G. ATKINS, Esq., Manaton, East Sheen (gr. Mr. G. Hutt); 2nd, Mr. REDWOOD; and the best double-flowered varieties by Mr. T. J. WHEELER. The best *Gloxinias* came from Mr. A. MEATON, Agill House Gardens, Richmond; 2nd, Mr. Hy. BURFOOT.

ROSES.

The principal class was that for 48 blooms distinct, shown in triplets. The 1st prize included the Gunnersbury Challenge Cup, as well as a considerable money prize. It was taken by Messrs. F. CANT & Co., Colchester, for excellent examples of such varieties as Mrs. Ed. Mawley, Marchioness of Devonshire, Medea, J. B. Clark, General Jacqueminot, M. Paul Lede, Aimée Cochet, Cleopatra, Liberty, &c.; 2nd, B. R. CANT & SONS, Colchester, for very fresh-looking blooms of generally lesser size than the foregoing. Very fine were Helen Keller, Gabrielle Luizette, Marie Verdier, Yvonne Vascherot, Ulrich Brünner, and Le Progrès.

The best 12 blooms of one variety were shown by Messrs. D. PRIOR & SON with Mrs. Sharnan

Crawford of an even size, a capital boxful; 2nd, Rev. J. H. PEMBERTON, Havering-atte-Bower, Essex, with an almost equally fine lot of Frau Karl Druschki.

Messrs. PRIOR & SON were also first in the 24 blooms class, shown in triplets, and first for 12 blooms shown in triplets. The best 12 Teas of one variety came from Messrs. F. CANT & Co., the variety being Mrs. Ed. Mawley; 2nd, Messrs. D. PRIOR & SON, with white Maman Cochet.

A class was provided for local rosarians, and the first prize for 12 blooms was taken by Rev. W. H. OXLEY, Petersham, and he was followed by LIONEL WARDE, Esq., Petersham House.

FRUIT.

A collection of 6 dishes, distinct.—As on many previous occasions, Sir SWINFEN EADY, Oatlands Lodge, Weybridge (gr. Mr. Lock) was first. He staged Hero of Lockinge Melon, Nectarine Dryden, Peach Early York, Grapes Foster's Seedling and Madresfield Court; 2nd, Mr. T. F. CONWAY, Ham House Gardens, his best dishes being Peregrine Peach, Early Rivers Nectarine, and a Melon.

The winner of the first prize for three bunches of Black Grapes was Mr. J. G. WESTON with Black Hamburg; 2nd, Mr. J. LOCK, with Madresfield Court.

The first prize for white Grapes was taken by Mr. J. G. WESTON, Eastwell Park Gardens, Kent, for large bunches of Foster's Seedlings.

The exhibits of Nectarines, Peaches, and Strawberries were generally of fine quality and large size.

VEGETABLES AND ROOTS.

Considering the unfavourable season, these productions were of great excellence, especially the tubers of early Potatoes. Cauliflowers, Onions, Peas, Horn and Intermediate Carrots, Turnips, Saladings, and Cabbages, which were all well shown.

In the class open to gentlemen's gardeners for a collection in competition for Messrs. J. Carter & Co.'s special prizes, Mr. J. T. Conway (gr. to Earl DYSART, Ham House, Petersham) was 1st, with Quite Content Peas, Record Onion, Snowball Cauliflower, Egyptian Beet, May Queen Potato, and Jersey Turnip. Mr. Conway also won Messrs. Webb & Son's special prize for a collection of vegetables, and the Society's 1st prize for a collection of vegetables. In the last-named he showed Asparagus, Market Favourite Carrot, Reliance Globe Beet, New Commander Cucumber (20 inches long), Viceroy Tomato, and Kinver Monarch Cauliflower.

NON-COMPETITIVE EXHIBITS.

In the marquee in which the plants were staged were a number of exhibits from nurseriesmen.

Messrs. W. CUTBUSH & SONS, Highgate, contributed Pæonies, Lilliums, Pyrethrums, Delphiniums, Eremurus robustus, Aquelegias, Campanulas, &c., of fine quality. (Silver Medal.) A number of hardy shrubs, mostly with variegated foliage, was shown by Mr. L. R. RUSSELL, of the Richmond Nurseries, Ivies forming a prominent feature. (Silver-Gilt Medal.) Mr. W. THOMPSON, Sheen Nurseries, arranged a large circular group of plants, consisting of Hydrangeas, Acers, Palms, Hoteia japonica, Begonias, &c. (Silver-Gilt Medal.) A group of 12 feet in diameter was contributed by Mr. H. E. FORDHAM, Nurseryman, Twickenham, consisting of Gloxinias arranged in a setting of Adiantum Ferns. (Silver Medal.) A group of pot Roses, about 150 in number, were shown by Messrs. J. VEITCH & SONS, LTD., Chelsea. These were arranged in a semi-circle, and had R. polyantha and other climbing varieties as a background. (Silver Medal.) Messrs. W. PAUL, Waltham Cross, exhibited largely climbing Roses in pots, cut Roses in baskets, including some of the novelty, Warrior, a bright crimson variety, an improvement upon Papa Gontier. There were many very superior blooms of new H. Tea varieties. (Gold Medal.) Messrs. W. FROMOW & SONS, Nurserymen, Chiswick, staged a good group of Acers in variety, a well-bloomed plant of Raphiolepis ovata, and a capital lot of small plants of Kalmia latifolia. Mr. CHAS. W. BREADMORE, Winchester, staged a splendid collection of Sweet Peas. Messrs. T. WARE & Co., LTD., Feltham, staged an extensive collection of flowers of hardy perennials. (Gold Medal.) Messrs. J. PEED & SON, West Norwood, Lon-

don, S.E., showed Carnations, Roses, and hardy plants in variety. Mr. M. PRICHARD, Christchurch, Hants, showed extensively hardy perennials as cut flowers, among which were abundant blooms of Water Lilies, herbaceous Pæonies, &c. The Misses E. & M. KIPPING, Hutton, Essex, showed a small collection of hardy plants.

COLCHESTER ROSE AND HORTICULTURAL.

JUNE 26.—The summer exhibition of this society was held on this date in the Castle Park grounds, Colchester, an ideal spot for a flower show, and situated nearly in the centre of the town. Fortunately the weather was favourable. The Rose is the most prominent flower at this society's show, and some splendid blooms were staged, but in less numbers than usual. Considering the unfavourable season, the quality of the exhibits was good and the competition in the various classes was very close. Herbaceous flowers were very fine, especially the 24 bunches of these flowers from Messrs. R. WALLACE & Co.'s nursery, and the same firm showed a realistic piece of rockwork in a dell at the entrance to one of the tents, with Water Lilies. Fruit and vegetables were also good in quality, and the amateur and cottager classes were strongly contested.

Roses.—An important class was that for 48 blooms of distinct varieties. The 1st prize was won by Messrs. F. CANT & Co., Colchester, with magnificent blooms remarkable for their perfect shape and colour. 2nd, Messrs. B. R. CANT & SONS, Colchester; and 3rd, Messrs. D. PRIOR & SONS, Colchester.

Messrs. F. CANT & Co. also won the premier prize in the class for 18 Tea or Noisette Roses with exquisite flowers. 2nd, Messrs. PRIOR. In the class for 24 garden or decorative varieties of Roses, Messrs. B. R. CANT & SONS were awarded the 1st prize; 2nd, Messrs. F. CANT & Co. This last-named class provided some charming exhibits.

In the amateur classes for Roses, the chief was for 18 distinct varieties, and some grand flowers were shown. The premier prize was won by a successful amateur, Mr. O. G. ORPEN, Hill Side, West Bergholt, Colchester. 2nd, Mr. W. LEGGETT, Colchester. In the chief class for Tea Roses, the Rev. F. R. BURNSIDE, Great Stambury Rectory, Rochford, Essex, was 1st with grand blooms of Cleopatra; Mr. ORPEN followed, his variety being Souvenir de P. Notting, a little less developed than the premier flowers. 3rd, Mr. LEGGETT. In the smaller class for 12 blooms of a Tea Rose, Mr. ROLTS and Dr. PALLETT won in the order named. Classes were provided that were open to residents of the borough of Colchester only, the chief winners being Mrs. ELLIS, Major BUCKLE, Messrs. G. W. FINCHAM, DIGBY-OSBORNE, and Major KEMBLE.

Table decoration.—Decorated dinner tables were a great feature, and Roses were largely used for their adornment, especially beautiful being the single Roses; the tables in which Sweet Peas were used were also charming in appearance. There were 11 tables in all, and Mrs. O. G. ORPEN won the premier award with a delightful arrangement of single Roses. 2nd, Mrs. A. HITCHCOCK, who also used Roses. Miss A. F. HARWOOD was 1st in the class for a decorated stand or epergne. Miss KING showed the best basket of flowers, and Mrs. ORPEN the best bowl of Sweet Peas.

Medals were offered for the best Roses in their several divisions. Messrs. B. R. CANT & SONS secured the medal offered in the large class with flowers of Mrs. E. Mawley.

Mr. O. G. ORPEN took the medal for any variety other than Tea, with splendid trusses of Hugh Dickson; and the Rev. F. R. BURNSIDE had the best Tea in grand flowers of Cleopatra.

Herbaceous cut flowers.—Messrs. R. WALLACE & Co., Colchester, won easily in the class for 24 bunches, having splendid flowers that were well staged. 2nd, Mr. HARWOOD. In the smaller class for 12 bunches the Hon. W. LOWTHER, Campsea Ash, Wickham Market, Suffolk (gr. Mr. A. Andrews) had excellent bunches. 2nd, Mr. R. DOW. The best Pæonies were shown by Messrs. BUNTING & SONS, Colchester, and R. WALLACE & Co. in the order named.

The classes for Sweet Peas were strongly contested. Messrs. SALTmarsh & SON, High Street, Chelmsford, and Messrs. KING & Co., Coggeshall, were the principal winners in the large class, having fine flowers.

Fruit.—There was only one collection staged in the class for six dishes, and this was excellent. Hon. W. LOWTHER (gr. Mr. A. Andrews) was the exhibitor, and he had good Grapes, Melons, Peaches, Nectarines, and Strawberries. The same exhibitor was also 1st in the classes for Peaches, Nectarines and Melons. In the Strawberry classes were seen fine fruits of Leader, but in most of the classes Royal Sovereign was staged. Grapes were not of special merit: the Hon. W. LOWTHER had the best stand.

Vegetables were numerous displayed. Asparagus is always a feature at Colchester, and this year it was again very fine, Mr. A. J. HARWOOD having grand growths. Some splendid Potatoes, Peas, and collections of salads were also staged. Messrs. BOUND, STROWGLER, and MUMFORD were the principal winners in the vegetable classes.

Non-competitive exhibits were staged by Messrs. DOBBIE & Co., Rothesay (Sweet Peas), Messrs. ABBOTT, Ardleigh (Ranunculus), Messrs. R. WALLACE & Co. (hardy plants and cut flowers), Messrs. JOHN K. KING & SONS, Coggeshall; Messrs. ERNEST W. KING & Co., Coggeshall; Messrs. F. SMITH & Co., Woodbridge, and J. WILLIAMS, Ealing.

ROYAL AGRICULTURAL: LINCOLN HORTICULTURAL SECTION.

JUNE 25-29.—The Royal Agricultural Society held its annual exhibition at Lincoln on these dates, and in connection with the agricultural show proper a special and distinct horticultural section was provided in two large tents, under the secretaryship and general management of Mr. Peter Blair, who is to be congratulated on the success attending the undertaking.

The show proved a great attraction, and visitors came in crowds to inspect the flowers and the many beautiful plants exhibited.

The only prizes offered in competition were for groups of plants arranged for effect. Six groups were staged down the centre of the tent, thus giving a fine uniform appearance throughout. The 1st prize was won by Mr. W. HOLMES, Chesterfield, who used large Palms in the centre, and around were intermixed Codiaëums (Crotons), climbing Roses, and other flowering and foliage plants. The plants were well grown, and very tastefully arranged. Mr. SHARP, Huddersfield, was 2nd, with similar plants; 3rd, Mr. BLACKER, Selby.

Facing the entrance of the tent was a very fine group of foliage and flowering plants, exhibited by Messrs. JAS. VEITCH & SONS, Chelsea, to which a Large Gold Medal was awarded. The exhibit contained a choice selection of Cattleyas, Lælias, and other Orchids; an assortment of Cannas in flower; well-bloomed specimens of Exacum macranthum, a group of Kalanchoe flammea, backed up by Palms, Marantas, Crotons, and other foliage plants, with Nepenthes and other plants at intervals, the whole being most tastefully arranged. A collection of Carnations from the same firm was staged, and the new border variety, Leander, with flowers a shade of salmon, was especially prominent. Messrs. VEITCH & SONS also displayed a group of new Chinese climbing plants, including Vitis Henryana, V. Thomsonii, and Actinidia chinensis.

Messrs. CUTBUSH & SONS, Highgate, had a large collection of plants and cut flowers, amongst which were groups of Calla Elliottiana, Erica ventricosa magnifica, and E. Cavendishii; Carnations, Roses, a large number of herbaceous flowers, and a fine Codiaëum (Croton) named Rustic. (Gold Medal.)

Messrs. R. H. BATH, LTD., Wisbech, staged a beautiful display of Carnations, chiefly of the American or winter-flowering type, such as Mrs. Burnett (rose pink), Enchantress (flesh colour), Floriana (pink), Britannia (scarlet), Mikado (heliotrope), Lady Bountiful (white), Harlowarden (dark crimson), &c. Messrs. BATH also exhibited a fine lot of herbaceous Pæonies, Sweet Peas, and Roses. (Gold Medal.)

Messrs. HUGH LOW & Co., Bush Hill Park,

Enfield, staged a choice collection of Carnations in the best varieties, including a plant of "Malmaison" Princess of Wales that was carrying 73 flowers. Amongst Orchids staged by this firm was a white Cattleya Mossiæ named King of Siam, also good specimens of the pretty Oncidium macranthum. (Gold Medal.)

Messrs. JAMES BACKHOUSE & SON, York, exhibited Roses, Carnations, Azalea rosæflora, Hydrangeas, Liliun Harrisii, and a fine new variety of Iris germanica labelled Lord of June. (Gold Medal.)

Mr. A. F. DUTTON, Iver, Bucks, staged a group of Carnations, chiefly of the American type. (Silver Medal.)

Mr. W. ARTINDALE, Sheffield, had a large collection of hardy herbaceous flowers, consisting of Irises Papavers, Pæonies, Pyrethrums, Allium Ostrowskianum (pink), Liliun rubellum, and others. (Gold Medal.)

Messrs. W. & J. BROWN, Stamford, displayed garden flowers of such kinds as Eremuri, Liliun Szovitzianum, Clematis integrifolia, Thalictrum Delavayii (a very pretty new herbaceous plant with pink flowers), Roses, Verbenas, Geraniums, &c. (Gold Medal.)

Messrs. DAVIS exhibited Begonias as cut flowers. (Gold Medal.)

Mr. W. SYDENHAM, Tamworth, staged Pansies, hardy flowers, &c. (Gold Medal.)

Messrs. HARKNESS & SONS, Bedale, Yorks, staged a large collection of hardy herbaceous flowers in great variety. Verbascum "Caledonia" (brown) was especially noticed. (Gold Medal.)

Messrs. GIBSON & Co. had very fine specimens of Aquilegia cœrulea and Geranium ibericum in an exhibit of herbaceous flowers that contained many other good varieties. (Gold Medal.)

Mr. GEO. MOUNT, Canterbury, staged a grand collection of Roses, both cut as flowers and as plants in pots. Amongst the cut specimens the varieties Mrs. J. Laing, Richmond, and Frau Karl Druschki were especially good. Climbing plants of Crimson Rambler, Dorothy Perkins, Blush Rambler, and others were trained above the main exhibit of flowers. (Gold Medal.)

Messrs. HILL & SON, Barrowfield Nurseries, Lower Edmonton, exhibited choice and rare Ferns. (Gold Medal.)

Messrs. BLACKMORE & LANGDON, Tiverton Hill, Bath, gained a Gold Medal for an exhibit of tuberous-rooting Begonias.

Mr. WATERS, Balcombe, showed Carnations, some of his best varieties being Elliott's Queen, Pride of Exmouth, Helen Goddard, Cecilia, and Fair Maid. (Gold Medal.)

Mr. JOHN ROBSON, Bowden, Manchester, displayed a pleasing group of Orchids, chiefly of Cattleyas, Cypripediums, Masdevallias, and Odontoglossum Alexandræ. Several of the Cattleyas were large, well-flowered specimens. (Gold Medal.)

Messrs. HEATH & SON, Cheltenham, exhibited Carnations in pots, grouped naturally on the grass. (Gold Medal.)

Messrs. WARE, Feltham, were awarded a Gold Medal for an exhibit of Begonias and Pæonies.

Messrs. BAKER, Wolverhampton, showed seasonable herbaceous flowers, and for which a Gold Medal was awarded.

Messrs. GILBERT & SON, Bourne, Lincolnshire, had a large exhibit of Anemones in variety. Those named Rosette and fulgens "The Queen" were especially pleasing. The same firm showed a collection of Sweet Peas. (Gold Medal.)

Messrs. ARTINDALE, Sheffield, exhibited floral designs. (Gold Medal.)

Messrs. R. PENNELL & SON, Lincoln, were awarded a Gold Medal for shrubs plunged in a natural style in the open.

The only exhibit of vegetables was a collection of upwards of 80 varieties from Lord ALDENHAM, Elstree (gr. Mr. Ed. Beckett). This was a most interesting and choice exhibit. (Gold Medal.)

Mr. BRADLEY displayed Roses of fine quality. (Gold Medal.)

Silver Medals were awarded to Messrs. BURCH, Peterborough, for Roses; Mr. JARMAN, Chard, for Roses; Messrs. BOYES & Co., Leicester, for Roses; Messrs. HOBBS, LTD., Dereham, Norfolk, for Roses; Messrs. COOLING & SON, Bath, for Carnations and Roses; and Mr. J. ILLMAN, Lincoln, for Carnations.

In the agricultural section of the show, Messrs. SUTTON & SONS, Reading, exhibited a collection

of grasses, roots, flowers, and other subjects of interest to the agriculturist and horticulturist. Messrs. DICKSON & ROBINSON, Cathedral Street, Manchester, showed grasses, forage plants, roots, flowers, plants, and seeds.

ROYAL METEOROLOGICAL.

JUNE 19.—The second of the afternoon meetings for the present session was held on the above date at the Society's rooms, 70, Victoria Street, Westminster, Dr. H. R. Mill (President) in the chair.

Mr. F. Campbell Bayard read a paper on "Weather and Crops, 1891-1906," in which he gave an analysis of the agricultural and horticultural tables which are included in the annual "Phenological Reports." He had sorted out the various crops into "good," "average," or "bad," for each district, and against each he had placed the temperature, rain and sunshine for the four seasons, and whether these statistics were above or below the average. In the paper Mr. Bayard gave tables showing the general results with regard to Wheat, Barley, Oats, Beans, Peas, Potatoes, Turnips, Mangolds, Hay, Clover, Apples, Pears, Plums, Raspberries, Currants, Gooseberries, and Strawberries.

A paper by Dr. C. P. Hooker on "The Relation of the Rainfall to the Depth of Water in a Well," was also read. The author gave the weekly measurements of the depth of water in a well 101 feet deep at Further Barton, Cirencester, compared with the weekly rainfall for the years 1903-1906. The results were very interesting, as they included the remarkably wet year 1903, and the dry summer and autumn of 1906.

SCOTTISH PANSY.

JUNE 22.—This society was instituted in 1844, and the jubilee of its formation was celebrated in 1894, but from various causes the annual shows were discontinued that same year. An effort has recently been made, under the presidency of Mr. James Grieve, of Redbraes Nursery, with his son, James C. Grieve, as secretary and treasurer, to revive the show, and by so doing to create greater interest in the cultivation of Pansies and Violas. Judging from the excellence of the show held on the foregoing date in the Free Gardeners' Hall, Picardy Place, Edinburgh, the efforts of the promoters have been very successful. Pansies and Violas furnish flowers of all shades of colour, and, being of dwarf habit, they lend themselves to purposes of decoration unsurpassed by any other class of plant. Interest in the show by exhibitors and visitors was gratifying and encouraging to the committee. The number of entries totalled 250. Messrs. DOBBIE & Co., Rothesay, staged an excellent non-competitive exhibit of these flowers. Mr. J. SMELLIE, Bushby, Messrs. A. LISTER & SON, Rothesay, and Mr. J. PAUL, Killearn, were prominent prize-winners in the nurserymen's classes; while in the amateurs' classes Mr. ROBERT DUNSMORE, Avonbridge; Mr. C. W. FRAME, Broxburn; Mr. W. WALLACE, Strathloanhead, were successful exhibitors. Mr. McKAY, Gargunnoch, won the 1st prize for 18 blooms of show Pansies in distinct varieties. Mr. PAUL showed the best 24 blooms of Fancy Pansies, and Mr. SMELLIE the best 12 blooms of these flowers. Mr. PAUL, Mr. McKAY, and Mr. SMELLIE were also successful in other classes. A special prize offered for any Fancy Pansy or Viola showing a break or novelty in colour was won by Mr. DOBBIE, Rothesay, with the variety Mrs. J. C. Grieve. The best bloom of a Fancy Pansy exhibited was the variety Miss Neil, shown by Mr. SMELLIE; and the best show Pansy was shown by Mr. C. W. FRAME in the variety George Mitchell. P. Z.

NATIONAL ROSE.

JULY 4.—The annual exhibition of the National Rose Society is being held as these pages are passing through the press. In most respects the display is up to the average merit. Hybrid Tea and Tea varieties furnish the finest blooms, but the largest flowers are seldom in perfect condition.

The nurserymen make a good competition in the larger classes, and in most of the amateurs' classes exhibitors are exceedingly numerous.

Forty blooms, distinct (trebles).—The 1st prize has been won by Messrs. B. R. CANT & SONS,

Colchester. In this competition the following are as fine blooms as could be desired, although all are not of the largest size:—Catherine Mermet, C. J. Graham, Duke of Edinburgh, La France, Tom Wood, Mme. Melaine Soupert, Mamie, and Lady Mary Fitzwilliam are among the finest shown. 2nd, Messrs. D. PRIOR & SON, Colchester, with a stand of fine blooms, some showing the effects of the weather.

Twenty-four blooms, distinct.—Mr. J. MATTOCK has a very fine stand of blooms, which are generally of large size and unblemished appearance, Ulrich Brunner, Marie Baumann, Aimie Cochet, Mildred Grant, Duke of Wellington being among the best. 2nd, Hy. DREW, Esq., who has fine blooms, the varieties Horace Vernet, A. K. Williams, Louis van Houtte, Rev. A. Cheales, Hugh Dickson, and G. Piganneau being the best flowers.

Twenty-four Teas and Noisettes (single blooms).—The 1st prize has been won by Mr. G. PRINCE, Longworth Nurseries, Oxford, with even-sized blooms, very good being those of Princess Beatrice, Medea, Maman Cochet, Mrs. E. Mawley, Golden Gate, and Madame Cusin. 2nd, Messrs. F. CANT & Co., Colchester, with smaller blooms.

Twelve Tea and Noisette blooms.—Messrs. J. BURRELL & Co. have been awarded the 1st prize for a very superior stand of flowers, Mrs. E. Mawley, Empress Alexandra of Russia, White Maman Cochet, Cleopatra, and Catherine Mermet being the finer varieties.

REPRESENTATIVE GROUPS.

In the nurserymen's class for a representative group of Roses, arranged on a space not exceeding 100 square feet, Mr. G. MOUNT, Canterbury, has won the 1st prize. Fine standards of the varieties Liberty, Hiawatha, Richmond, Frau Karl Druschki, W. J. Grant, Capt. Hayward, Alberic Barbier, Gardenia, &c., are prominent in the group. Immense numbers of Tea, Hybrid Tea, Polyantha, and climbing varieties make up the bulk of the exhibit.

A similar group of miscellaneous Roses is shown by Messrs. SPOONER & SONS, Woking, Surrey, who have obtained 2nd prize.

The most important class for groups of Roses is Class 16, and each exhibit is arranged on an area not exceeding 250 square feet. Messrs. HOBBS, LTD., Dereham, Norfolk, have been awarded the 1st prize for an exhibit composed chiefly of the showier varieties of the Rambler classes. The varieties Lady Ashton, Richmond, General McArthur, Margaret Dickson, La France, and Caroline Testout were very good. Messrs. PAUL & SON, The Old Nurseries, Chess-hunt, has obtained the 2nd prize for a group in the form of a half-circle, and containing Tea, Hybrid Tea, Hybrid Perpetual, Moss, Rambler, and other varieties. In some instances plants, and in others large bouquets of cut blooms were shown.

The prizes for 72 single blooms, and those offered in other important classes had not been awarded at the moment of going to press.

GARDENING APPOINTMENTS.

[Correspondents are requested to write the names of persons and places as legibly as possible. No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting box for the Gardeners' Orphan Fund, it will be thankfully received and acknowledged in these columns. This box was last opened on May 23, and the secretary, Mr. Wynne, has handed us a receipt for the sum of £2 2s.]

Mr. J. H. PUCKERING, for the past 4 years Gardener to R. C. A. BECK, Esq., Bookham Lodge, Cobham, Surrey, as Gardener to J. B. MERCER, Esq., at the same place.

Mr. HERBERT ARNOLD, for the past 74 years Gardener to Mrs. D. EVANS, Dalewood, Mickleham, Surrey, as Gardener to C. B. SMITH, Esq., Denham Mount, Denham, Bucks.

Mr. COLIN ADAMS, for the past 64 years Head Gardener to the late F. ELKINGTON, Esq., Sion Hill, Wolverley, near Kidderminster, as Head Gardener to A. H. HARMAN, Esq., Lower Greyswood, Haslemere, Surrey. (Thanks for 1s., which has been placed in the R.G.O.F. box.)

Mr. R. FRASER, for the past 4 years Gardener to JULIUS G. MOSENTHAL, Esq., Staple Hall, Bletchley, Bucks, as Gardener to Sir BASIL MONTGOMERY, Kinross House, Kinross, N.B.

Mr. W. BROOMFIELD, for the past 4 years Gardener to Major D. P. CHAPMAN, Clare House, East Malling, Maidstone, Kent, as Gardener to B. V. MELVILLE, Esq., at the same place.

Mr. HUBERT BRAY, for the past 7 years Foreman in the Gardens at Langley Park, Slough, as Gardener to Lady HAWKE, Wighill Park, Tadcaster, Yorks.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending June 29, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The weather was again cold and unseasonable, with a generally cloudy sky and frequent falls of rain. A thunderstorm, with heavy hail, occurred on Monday at Dublin, and on Saturday thunderstorms (locally of great severity) were experienced in many parts of England and at some Scottish stations. Snow was observed at Harrogate during Monday evening, while the electrical disturbances of Saturday were accompanied by hail in several places.

The temperature continued below the average, the deficit ranging from about 3.5° in England E. and the English Channel to about 6.5° in England N.W., Ireland N., and Scotland E. The highest of the maxima were recorded, as a rule, between Wednesday and Friday, and ranged from 70° in the Midland Counties to 63° in Scotland E. and Ireland N. The maxima were below 60° on one or more days at nearly every reporting station. The lowest of the minima, which were registered on rather irregular dates, ranged from 32° in Scotland E. (at Balmoral) to 40° in England E., and to 47° in the English Channel. The grass thermometer fell to 32°, or below in some Scottish localities, and also at Llangamarch Wells, Armagh, and Birmingham, the lowest reading being 27° at Balmoral.

The mean temperature of the sea.—The mean temperature showed an increase on most parts of the coasts, but at several of the Irish stations there was a decrease. The actual values ranged from about 58° at Margate and Eastbourne, and 56° at Newquay to about 51° on the east coast of Scotland, 49.4° at Lamlash and Burnmouth, and to 49.1° at Lerwick.

The rainfall was above the average in all districts except the English Channel, the excess being large in many parts of the Kingdom. As much as 1.37 inch resulted from the thunderstorm of Saturday at Fulbeck, and an inch or more was also measured in some parts of the metropolitan area. Early in the week some heavy falls were experienced in the N.W.; at Prestwick on Monday as much as 1.01 inch was collected in the gauge.

The bright sunshine was less than the average generally, but slightly exceeded it in England N.E. and Scotland E. The percentage of the possible duration ranged from 37 or 36 in the districts just named to 24 in England S.W., 25 in the Channel Islands, and to 22 in England S.

THE WEATHER IN WEST HERTS.

Week ending July 3.

Still cold and wet but not so windy. During June there were only two days which were unseasonably warm, and on two nights during the past week the exposed thermometer registered a temperature only 4° above the freezing point, which is a very low reading for the time of year. The ground still remains very cold, and is as much as 4° colder at 2 feet deep and 6° colder at 1 foot deep, than is seasonable. Rain fell on nine of the last ten days, but the amounts on each occasion were small. For a fortnight no rainwater at all has come through the percolation gauge on which short grass is growing and only a few drops each day through the bare soil gauge. The sun shone on an average for less than 8½ hours a day, or for only about half the usual duration at this season. The wind has not been so generally high as during the previous weeks, but from whatever quarter it came the air remained cold for the time of year. The mean amount of moisture in the air at 3 o'clock in the afternoon exceeded a seasonable quantity for that hour by as much as 11 per cent. E. M., Berkhamsted, July 3, 1907.

SCHEDULES RECEIVED.

WEST LONDON HORTICULTURAL SOCIETY'S exhibition, to be held on October 31, in the Town Hall, Hammersmith.

SALTAIRE SHIPLEY AND DISTRICT ROSE SOCIETY'S exhibition, to be held in Saltaire Park, on Tuesday, July 16, 1907.

HEREFORD AND WEST OF ENGLAND ROSE SOCIETY'S 41st annual exhibition, to be held in the Shire Hall, Hereford, on Wednesday, July 10, 1907.

The schedule of the Rose show of THE ROYAL BOTANICAL AND HORTICULTURAL SOCIETY OF MANCHESTER AND THE WHITE CITY contains several classes for decorative and single Roses which will be a novelty at the Manchester show. Prizes will also be given for groups of Roses and for arches of Climbing Roses. The show is to be held at The White City, late the Royal Botanical Gardens, on July 23.

CATALOGUES RECEIVED.

JOHN COWAN, Gateacre Nurseries, Gateacre, near Liverpool.—The "Bonis Hall" collection of Orchids.

GEORGE BUNYARD & Co., Ltd., the Royal Nurseries, Maidstone.—Strawberries, Grape Vines, Figs, &c.

FOREIGN.

M. HERB, Naples, Italy.—Bulbs and Seeds for Autumn sowing.

DAMMANN & Co., San Giovanni a Teduccio, near Naples, Italy.—Bulbs and Flower-roots.

DEBATING SOCIETY.

CARDIFF GARDENERS'.—A meeting of this association took place on June 19, when a purse of gold, &c., was presented to Mr. John Julian, on his resignation as hon. sec., a position which he has filled for the last 10 years. Mr. E. H. Battram, of Abercynon, made the presentation, and said that Mr. Julian had carried out the secretarial duties in an efficient manner. Mr. Julian thanked the members for their kind thought and the tangible manner in which they had shown their appreciation of his services. A. F. W.

MARKETS.

COVENT GARDEN, July 3.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Ed.]

Cut Flowers, &c.: Average Wholesale Prices.

s.d.	s.d.	s.d.	s.d.
Azalea mollis, per dozen bunches	4 0-6 0	Mignonette, per doz. bunches	3 0-4 0
Anemones, per doz. bunches	3 0-4 0	Myosotis, per doz. bunches	1 6-2 0
Bouvardia, per doz. bunches	2 0-3 0	Odontoglossum crispum, per dozen blooms	2 0-2 6
Calla aethiopica, p. dozen	1 6-2 6	Pæonies, per doz. bunches	4 0-8 0
Carnations, per dozen blooms, best American various	1 6-3 0	Pancratium, per dozen fls.	3 0-4 0
— smaller, per doz. bunches	9 0-12 0	Pelargoniums, show, per doz. bunches	4 0-6 0
— Malmaisons, p. dozen blooms	6 0-10 0	— Zonal, double scarlet	4 0-6 0
Cattleyas, per doz. blooms	10 0-12 0	Poppies, Iceland, doz. bunches	6 0-12 0
Cornflower, per doz. bunches	2 0-3 0	— Oriental	4 0-8 0
Eucharis grandiflora, per doz. blooms	2 0-3 0	— Shirley	2 0-3 0
Gardenias, per doz. blooms	1 0-2 0	Pyrethrums, per dozen bunches	1 6-2 6
Glaucolus, The Bride, per doz. bunches	6 0-9 0	Ranunculus, per dozen bunches	4 0-6 0
Gypsophila elegans p. dz. bunches	3 0-3 0	Rhodanthe, per doz. bunches	3 0-4 0
Iris, German, per doz. bunches	4 0-6 0	Roses, 12 blooms, Niphetos	1 0-3 0
— Spanish, p. dz. bunches	4 0-9 0	— Bridestrand	2 0-3 0
Lapageria alba, dz. 1 0-1 6		— C. Testout	2 0-3 0
Lilac, white, bunch 1 0-3 0		— General Jacquemont	0 6-1 0
Lilium auratum	2 0-3 0	— Marechal Niel	1 6-3 0
— candidum, bch. rubrum and album	1 6-2 0	— Kaiserin A. Victoria	1 6-3 0
— longiflorum	1 6-2 6	— Mrs. J. Laing	1 0-3 0
Lily of the Valley, p. dz. bunches	6 0-9 0	— C. Metmet	1 0-3 0
— extra quality	10 0-15 0	— Liberty	2 0-4 0
Marguerites, white, p. dz. bunches	2 0-3 0	— Mad. Chateaufort	1 0-3 0
— yellow, per dz. bunches	1 6-2 0	Stephanotis, per dozen trusses	3 0-5 0
		Stocks, per dozen bunches	2 0-3 0
		Sweet Peas, p. doz. bunches	1 0-4 0
		Tuberose, per doz. blooms	0 4-0 6
		Wallflowers, per dozen bunches	2 0-3 0

Cut Foliage, &c.: Average Wholesale Prices.

s.d.	s.d.	s.d.	s.d.
Adiantum cuneatum, per dozen bunches	4 0-6 0	Galax leaves, per dozen bunches	2 0-2 6
Asparagus plumosus, long trails, per doz. bunch	6 0-9 0	Hardy foliage (various), per dozen bunches	2 0-6 0
— medium, bunch	1 6-2 0	Ivy-leaves, bronze long trails per bundle	1 6-3 0
— Sprengeri	0 6-1 0	— short green, doz. bunches	2 0-3 0
Berberis, per doz. bunches	2 0-2 6	Moss, per gross	4 0-5 0
Croton leaves, bch. 1 0-1 6		Myrtle (English), small-leaved, doz. bunches	4 0-6 0
Cycas leaves, each Fern, English, per dozen bunches	1 0-2 0	— French, dozen bunches	1 0-1 6
— French, dozen bunches	2 0-4 0	Smilax, p. dz. trails	1 6-2 6

Plants in Pots, &c.: Average Wholesale Prices.

s.d.	s.d.	s.d.	s.d.
Ampelopsis Veitchii, per dozen	6 0-8 0	Ferns, in thumbs, per 100	7 0-10 0
Aralia Sieboldi, dz. larger	9 0-12 0	— in small and large 60's	16 0-25 0
Araucaria excelsa, per dozen	12 0-30 0	— in 48's, per dz.	4 0-10 0
Aspidistras, green, per dozen	18 0-30 0	— in 32's, per dz.	10 0-18 0
— variegated, dz.	30 0-42 0	Ficus elastica, per dozen	8 0-10 0
Asparagus plumosus nanus, doz.	9 0-12 0	— repens, per doz.	4 0-6 0
— Sprengeri, dz.	9 0-12 0	Fuchsias, per doz.	4 0-8 0
— tenuissimus, per dozen	9 0-12 0	Heliotropiums, per dozen	4 0-6 0
Boronia megastigma, per dz.	12 0-30 0	Hydrangea Thos. Hogg, per doz.	12 0-18 0
— heterophylla	12 0-24 0	— Hortensia, per dozen	8 0-12 0
Calceolarias, yellow 4 0-8 0		— paniculata, per dozen	12 0-30 0
Clematis, per doz. in flower	8 0-9 0	Kentia Belmoreana, per dozen	12 0-18 0
Cocos Weddelliana, per dozen	9 0-18 0	— Fosteriana, p. dozen	12 0-21 0
Coleus, per dozen Crassulacae (Kalo-anthes), per dz.	9 0-12 0	Latania borbonica, per dozen	12 0-18 0
Croton, per dozen Cyperus alternifolius, dozen	4 0-5 0	Lilium longiflorum, per dz.	12 0-24 0
— laxus, per dozen	4 0-5 0	— lancifolium, per dozen	12 0-18 0
Dracenas, per doz. Erica Cavendishii, per dozen	9 0-24 0	Lily of the Valley, per dozen	12 0-18 0
— ventricosa, per dozen	24 0-36 0	Lobelia, per dozen	5 0-6 0
— yellow	18 0-30 0	Marguerites, white, per dozen	4 0-8 0
Euonymus, per dz.	4 0-9 0	— yellow	12 0-18 0
		Mignonette, per dz.	5 0-8 0
		Musk, per dozen	4 0-5 0

Plants in Pots, &c.: Average Wholesale Prices (Contd.)

s.d.	s.d.	s.d.	s.d.
Pelargoniums, Ivy-leaved, Mde. Crousse and Galilee, p. dozen	4 0-6 0	Rhododendrons, per doz.	24 0-36 0
— Zonals, per dz.	4 0-6 0	Roses, H.P.'s, dz.	12 0-24 0
— showy	6 0-9 0	— Rambles, each	5 0-21 0
Petunias, double, per dozen	4 0-8 0	Saxifraga pyramidalis, per dozen	12 0-18 0
— single, per dz.	3 0-6 0	Selaginella, dozen	4 0-6 0
Rhodanthe, per dz.	4 0-6 0	Spirea japonica, per dozen	5 0-8 0
		Verbena, Miss Willmott, doz.	6 0-9 0

Fruit: Average Wholesale Prices.

s.d.	s.d.	s.d.	s.d.
Apples, per box, Tasmanian	8 6-9 0	Grape Fruit, case	19 0-22 0
— London Pippins	8 6-9 0	Grapes (English), Hambro's, p. lb.	10 0-16 0
— Scarlet Pearmain	6 6-7 6	— Alicante, pr. lb.	1 0-1 6
— Scarlet Nonpareils	7 6-8 0	— Gros Maroc, per lb.	0 10-1 6
— Sturmer Pippins	6 0-7 0	— English Muscats, per lb.	2 0-4 0
— French Crabs	6 0-7 0	— Belgian Hambro's, pr. lb.	0 8-1 3
— Cox's Orange Pippins	18 0-20 0	Lemons: Messina, case	8 0-14 0
— Alexandras	7 6-8 6	— Naples, p. case	12 0-20 0
— Prince Alfreds	6 6-7 6	— Luchies, per box	1 0 —
— Australian, box: Monro's Fav. orite, per box	7 0-9 0	Mangoes, per doz. (Guernsey), each	1 0-2 6
— Roman Beauty	7 0-8 0	— French, Rock, each	2 0-8 0
— Clappatts	7 0-9 0	Nectarines (English), per doz.	3 0-12 0
— New York Pippins	7 0-9 0	Nuts, Cobnuts, per doz. lb.	2 6-3 0
— Five Crowns	6 6-7 0	— Almonds, bags	54 0 —
— Cox's Orange Pippins	12 0-16 0	— Brazils, new, per cwt.	40 0-42 6
— Kymer's	6 0-7 0	— Barcelona, bag	32 6 —
Apricots (French), per box	1 2-1 4	— Cocoa nuts, 100	12 0-17 0
— French, cases	3 6-6 0	Oranges, per case: Palermo, 100's, box	6 0-6 6
— French, sieve	7 0-7 6	— Valencia	16 0-35 0
Bananas, bunch: No. 2 Canary	5 0 —	— Navels	10 0-10 0
— No. 1	5 6-6 0	— Jaffa	12 0-14 0
— Extra	6 6-7 6	— St. Michaels, per box	6 0-10 0
— Giants	8 0 —	— P. de la Roche, 100's, boxes	6 0-8 0
— Jamaica	5 0-5 6	— Murcia, box	8 0-14 0
— per dz.	0 9-1 3	Peaches (English), per dozen	2 0-12 0
Cherries (English), sieve	3 6-8 0	— French, p. box	1 0-1 9
— sieve	2 0-4 6	Pears (Austrian), per bundle of 3 boxes	10 0-20 0
— French, box	1 3-3 0	Plums (French), p. box	1 3-1 6
— French, sieve	4 0-6 0	Pineapples, each	2 0-3 6
— French, sieve	3 0-4 6	Strawberries (English), per peck	2 0-3 0
Cranberries, case	8 0-8 6	— per lb.	0 5-1 0
Currants (French), black, sieve	4 0-5 0	— English, per handle basket	0 9-1 6
— French, red, handle basket	1 6-2 0		

Vegetables: Average Wholesale Prices.

s.d.	s.d.	s.d.	s.d.
Artichokes (French), per dozen	2 0-2 6	Mushrooms (house), per lb.	0 8-10 0
Asparagus (English), p. bundle	0 9-1 3	— buttons, per lb.	0 10 —
— Montauban, p. bundle	1 6-1 9	— "Broilers", p. lb.	0 5-0 6
— French Giant, per bundle	5 0-6 0	Mustard and Cress, per dozen pun.	1 0-1 6
Beans, Broad (English), p. bushel	3 0 —	Onions (Lisbon), case	6 6-7 0
— Jersey, per lb.	0 6-0 7	— pickling, per bushel	2 0-2 6
— French, packet	0 3-0 4	— Spring, pr. dz. bunches	1 6 —
— Home-grown, per lb.	0 6-0 8	— Egyptian, bag	7 6-8 0
Beetroot, bushel	1 0 —	Peas (English), per bushel	2 0-3 0
Cabbages, per doz.	0 9-1 0	— English, p. bag	3 6-6 0
Cabbage Greens, bag	1 0-1 6	Parsley, 12 bunches	1 6-2 0
— red, per dozen	2 0 —	— bushel	1 0-1 6
Carrots (English), dozen bunches	1 0-1 6	Potatoes (Canary), per cwt.	6 0-7 0
— French, new, per bunch	0 2-0 2½	Radishes (Guernsey), per dozen	0 4-0 6
— per bag, unwashed	5 0-6 0	Rhubarb (English), natural, per dz.	1 0-1 6
Cauliflowers, doz.	2 0-2 6	Salsafy, p. dz. bdls.	3 6 —
Chow Chow (Sichuan edule), p. dozen	3 0 —	Spinach, English, per bushel	0 9-1 0
Cucumbers, per dz.	1 6-2 6	Tomatoes: Canary, per bundle	6 0-8 0
Endive, per dozen	1 9-2 0	— selected, per dozen lbs.	5 3-5 6
Horseradish, foreign, dz. bdls.	18 0-14 0	— small selected, per dozen lbs.	4 6-5 0
Leeks, 12 bundles	1 6 —	Turnips (French), new, per bunch	0 3-0 3½
Lettuce (English), Cos, per score	0 4-0 6	— English, doz. bunches	2 0-3 0
Marrows (English), per dozen	4 0-7 0	Watercress, per doz. bunches	0 4-0 6
Mint, per dozen bunches	0 9-1 0		

REMARKS.—The supplies of English Peaches and Nectarines are larger, but there is not a good demand for these fruits owing principally to the large quantities of Strawberries on the market. Prices of English Tomatoes have further advanced, and are selling freely. Strawberries are now very plentiful, but they are of poor flavour and quality owing to a continued absence of sunshine. The last consignment of Australian Apples for this season has arrived. P. L., Covent Garden, July 3, 1907.

POTATOES.

Kent's 7. 6d. to 10s.; Bedford's, 7s. to 8s.; Jersey's, 7. 6d. to 8s.; St. Malo's, 8s.; Cherbourg's, 7s.; Tenerife's, 6. 6d. to 7s.; old Potatoes, 7s. 6d. to 8s. A fair quantity of new English Potatoes are on the market. It is expected that supplies from Jersey will finish this week. A. B., Covent Garden, July 3, 1907.

COVENT GARDEN FLOWER MARKET.

At the end of last week there was a slight advance in the prices of some cut flowers. *Lilium longiflorum* was dearer, but I find this morning these flowers are cheaper again. *L. lancifolium* of the best quality is not over plentiful. Good blooms of *L. tigrinum* are making higher prices than those of *L. longiflorum*. Callas may realise fair prices one morning but the next day they are not wanted. The market has received Sweet Peas from under glass for the past two months, and, now those from the open are in, the public is tired of them. Roses vary considerably; a few of the best quality blooms make good prices. Carnations are over-plentiful and are sold by hawkers in the streets for very little money. Paeonias are seen in large quantities; a few of the pure white, bluish, and pink coloured varieties sell well, but the old double crimson flowers are disposed of for very low figures. Poppies are abundant; the improved Iceland varieties sell best, but the Shirley Poppies are also good. Herbaceous Pyrethrums are abundant; the single crimson and the double white kinds are the most appreciated. *Gypsophila elegans* is arriving in whole van loads. Eucharis, Stephanotis, *Lapageria alba*, white Pelargonium, Tuberoses, &c., are all well supplied, but flowers with short stems have depreciated in value. There is no lack of cut foliage of all description.

POT PLANTS.

Several growers have cleared their stocks of some subjects for the season, and special orders may be difficult to execute, but up to the present supplies have been abundant. Zonal Pelargoniums have fallen in value, but good Ivy-leaved varieties have been in demand. Show or Regal varieties are still over-plentiful. *Crassula coccinea* is very good; *C. jasminea* and hybrid varieties are also on sale. *Hydrangea Hortensia* can be had in plants of all sizes up to those 3 feet high, and with about a dozen good heads of bloom. *Verbena "Miss Willmott,"* Fuchsias, yellow and white Marguerites, yellow Calceolarias, and Mignonette are prominent flowering plants seen on the stands. *Chrysanthemum segetum* forms a good pot plant, but it is over-plentiful. Some growers of Rambler Roses have cleared their saleable stocks for the season. Good prices have been generally maintained; shapely and well-flowered plants of the variety Dorothy Perkins have realised two guineas a pair. Ferns are well supplied in all sizes. Palms vary but little, they are generally procurable in all sizes. Some well-grown plants of *Pandanus* are seen. *Ficus elastica* is good, but the demand for this old favourite parlour plant has fallen off considerably. *Aralia Sieboldi* and the variety Moseri are selling at advanced prices. *Asparagus Sprengeri* is now extensively used for florists' work. *A. H., Covent Garden, Wednesday, July 3, 1907.*

TRADE NOTICES.

MESSRS. A. T. SIMS, LTD.

A company with this title has been registered with a capital of £5,000 in £1 shares, for the purpose of acquiring the Kingsfield Nursery business lately carried on by Mr. A. T. Sims, at Sewardstone Road, Chingford. There will be no initial public issue of the shares, and the company will be registered without articles of association.

MESSRS. W. DENNIS & SONS, LTD.

The above-named company has lately been registered with a capital of £75,000 in £1 shares, for acquiring the potato, fruit, seed, and other businesses of Messrs. W. Dennis and Sons and Messrs. J. and H. Dennis. There is no initial public issue of the shares. The first directors are W. Dennis, J. W. Dennis, J. M. Dennis, J. H. Dennis, T. E. Dennis, and F. W. Dennis.

MR. WILLIAM N. LINDSAY, LEITH.

Mr. Alexander Cross, who has severed his connection with Messrs. Bell & Bieberstedt, has entered the firm of Mr. William N. Lindsay, as partner. A department for the wholesale seed business has been added to the firm, and of this branch Mr. Cross will assume the management.

ANSWERS TO CORRESPONDENTS.

BOTANICAL PERIODICALS: *S. S. A. Botanical Magazine*, published by Messrs. Lovell, Reeve & Co., Ltd., 6, Henrietta Street, Covent Garden, W.C.; *Journal of Botany*, West, Newman & Co., 54, Hatton Garden, E.C.

BUTTERCUPS ON LAWN: *W. H.* You cannot do better than treat the grass with the dressings you mention. The nitrogenous manures will favour the growth of the grasses, and in time they may be expected to crowd out the weeds.

CARNATION LEAVES DISEASED: *Ireland.* The injury is called Bacteriosis, and is primarily due to punctures by aphides. Bacteria gains an entrance into the tissues of the leaf through the wounds set up by the aphides and this causes further trouble. Aphides should be kept down by spraying with some suitable insecticide.

CARNATION ROOTS: *Mack.* The white insects on the roots are known as *Rhipisia terrestris*. Bisulphide of carbon will destroy them. Make holes with a piece of stout wire in the soil, and use two teaspoonfuls of the chemical to a 6-inch pot. Afterwards shade the plants. The substance is poisonous to animal life, and highly inflammable.

CUCUMBERS DISEASED: *W. X.* Your plants are affected with the spot disease. See answer to *J. C.* in our issue for June 22, p. 416.

DIGITALIS FLOWERS: *F. E. S. & Co.* This abnormal form is by no means uncommon. It

is known as regular peloria, and is often seen in the Toadflax, *Antirrhinum*, and many other flowers.

FRUIT RECENTLY FUMIGATED: *Anxious.* We have never heard of any injurious effects following the consumption of fruits that have been gathered from trees that had been recently fumigated with tobacco smoke. In the case of fruits from which the skin is removed before consumption, no bad effects could possibly follow.

GARDENING IN THE UNITED STATES: *R. J. H.* See articles on this subject in our last volume, pp. 80, 191.

GARDENIA AND AZALEA SHOOTS DYING: *Kent.* The shoots have the appearance of having been injured by some external influence such as excessive fumigation, or an application of too strong an insecticide. Without knowing all the circumstances, we are less able to judge of the cause than those on the spot.

GRAPES: *H. E.* There is no fungus disease present in the berries. The cause of the failure is probably due to some cultural defect. We suspect that the trouble exists at the roots; see that the borders are in a satisfactory condition.

HOLLY LEAVES: *R. A.* The damage is caused by the grub of a fly. You can do nothing in the case of those leaves which are already infested, but by spraying them with quassia extract you will render them distasteful to the adult insects, and so prevent the insects depositing further eggs on the foliage.

LILY DISEASE: *A. H.* See reply to *G. O. P.* in our issue for June 22, p. 416.

LUPINS DROPPING THEIR BUDS: *W. U.* The trouble is caused by a fungus, *Sclerotinia sclerotium*, that attacks the roots. The soil in which they are growing should be treated with quicklime, or, better still, with gas-lime, after the plants are removed. If your stock is not extensive, we advise the destruction of the plants by burning, and the planting of healthy roots on a different quarter of land.

MUSCAT OF ALEXANDRIA GRAPES: *G. S.* Allow the vines to remain without disturbance until the resting season, when they should be lifted, and the borders thoroughly overhauled. You will gain nothing by planting out young vines at this late season, and in any case we should advise an inspection of the interior of the border. The wire worms can be trapped with portions of some vegetable roots, such as Carrot or Potato.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers.* **PLANTS:** *A. H.* *Pentstemon glaber* and *Erigeron philadelphicus*.—*A. E. E.* 1, *Cephalanthus pallens*; 2, *Atropa Belladonna*; 3, *Cynoglossum officinale*; 4, *Verbascum nigrum*.—*O. W.* *Libertia formosa*.—*H. L.* 2, *Habenaria conopsea*.—*H. K.* *Silene nutans*.—*A. P. N.* 3, *Campanula ramosissima*.—*W. D. M.* *Ceanothus Veitchianus*.—*Bids.* We are unable to name the leaf received from Ceylon in the absence of further material. The shrub is *Santolina Chamæcyparissus*.—*F. S.* 1, *Podocarpus Totara*; 2, *Cephalotaxus pedunculata* var. *fastigiata*; 3, *Iris versicolor*; 4, *Salix triandra*; 5, *Aristolelia Macqui*; 6, *Anemone pennsylvanica*.—*C. L. L.* We are only able to give the name of one of your Roses, No. 6, *Reine Marie Henriette*. Send them direct to a nurseryman who has the opportunity to compare them with other flowers.—*R. W. P. & S.* *Dictamnus fraxinella*.—*A. H.* *Polygonum sachalinense*.—*K. F.* 1, *Deutzia crenata*; 2, *Azara microphylla*; 3, *Cyperus longus*; 4, *Orchis pyramidalis*.—*Palmer.* *a*, *Weigela rosea*; *b*, *Crataegus pyracantha*; *c*, *Leycesteria formosa*; *d*, *Centranthus ruber*;

e, *Potentilla "Hamlet"*; *f*, *Erigeron philadelphicus*.—*M. & M.* *Olearea macrodonta*.—*G. M.* 1, *Swainsonia galegifolia*; 2, *Astrantia major*; 3, *Bletia hyacinthina*; 4, *Potentilla sanguinea*, garden variety; 5, *Centaurea montana alba*; 6, *Lilium Martagon*.—*H. L.* *Franciscea (Brunsfelsia) acuminata*.—*V. J. T.* 1, *Odontoglossum Lindleyanum*; 2, *Oncidium caesium*; 3, *Aerides japonicum*; 4, *Masdevallia swartzifolia*; 5, *Stelis muscifera*; 6, *Oncidium triquetrum*.—*H. A., Notts.* *Begonia incarnata metallica*.—*J. B., North Wales.* 1, *Lælia purpurata*, a very good variety; 2, *Dendrobium Calceolaria* of the variety often called *D. moschatum*; 3, *Libertia formosa*; 4, *Saxifraga umbrosa serratifolia*; 5, *Saxifraga trifurcata*; 6, *Lysimachia nemorum*.—*E. C. C. D.* *Limnanthes Douglasii*.—*S. W.* Probably a *Daphne*; send again when in flower. —*W. P.* We do not undertake to name varieties of Roses.

PAULOWNIA IMPERIALIS: *W. N.* This is a handsome, hardy, deciduous tree, not uncommon in borders in gardens, where its stately broad foliage forms a suitable background to flowering plants. In warm and sheltered localities it blooms early in the season, producing terminal panicles of pale violet-coloured flowers. The points of the shoots usually suffer injury from spring frosts, in English gardens, but in seasons when the trees are able to expand their flowers, the Paulownia is exceedingly effective. It was introduced from Japan nearly 70 years ago. The genus possesses this species only, and belongs to the natural order Scrophulariaceæ.

PEAR SHOOTS INJURED: *J. P.* The branches are dying as the result of a fungus disease known as brown-rot. Cut out the diseased shoots, well below the seat of injury and burn them.

QUINCE SEEDLINGS: *E. B.* You may use these as stocks for grafting varieties of the Pear.

RASPBERRY FRUITS, ETC.: *Miss P.* The failure of the Raspberry fruits is due to imperfect fertilisation of the flowers, probably the result of the wet season. The Rose leaves are attacked by a fungus, *Asteroma roseæ*. Collect and burn all diseased leaves and spray the healthy ones with liver of sulphur, using one ounce of the sulphur in two gallons of water.

SPOT DISEASE OF GRAPES: *R. G. M.* The berries are affected with the spot disease, which is caused by a fungus *Gloeosporium ampelophagum*. Dust the bunches with a mixture of one part quicklime and two parts of flowers of sulphur. The use of stable manure in the border favours the disease.

STAND FOR EXHIBITING GRAPES: *S. W.* We know of no regulation size for a stand to hold two bunches, but those usually adopted for this number are from 12 to 15 inches in length, about the same measurement in depth, and about 12 inches in height.

TOMATO DISEASE: *S. W. W.* It is advisable to obtain fresh seeds from healthy plants.

TOMATO FRUITS WITH UNRIPENED PATCHES: *F. W. H.* The blotches and hard patches are due to an absence of potash in the rooting medium. Dress the soil with light sprinklings of sulphate of potash and afterwards well water the roots.

TOMATO LEAVES: *H. R.* This condition is brought about by excessive feeding and watering. The plants have grown with too much vigour, and have expended their energies in the formation of shoots and leaves instead of fruits. The leaves have become more or less succulent and hence their brittle nature. Tomato plants should not be too liberally watered at their roots, and if their root-run is somewhat restricted, so much the better.

VINE LEAVES FROM THE OPEN: *J. P.* There is no disease present; the injury has been caused by chills which have arrested the growth of the foliage.

YEW TREE AT WARBLINGTON: *F. R.* The tree is mentioned in *Lowe's Yew Trees of Great Britain and Ireland*. You may send the picture for our consideration.

COMMUNICATIONS RECEIVED.—*J. B.* (thanks for 1s, which has been placed in R.G.O.F. box).—*J. M. L.*—*Studley*—*A. B.*—*T. C. R.*—*V. C. S.*—*W. R. C.*—*E. T.*—*S. P.*—*A. C.*—*L. W. D.*—*H. G.*—*J. W.*—*Rev. G. H.*—*E. B.*—*J. D.*—*C. L. L.*—*A. H.*—*J. D. W.*—*H. L.* & *Co.*—*H. S.*—*J. C.*—*T. S.*—*F. B.*—*F. G. T.*—*H. B.*—*W. H. C.*—*H. C.*—*Dr. A. R. P.*—*J. R.*—*H. S.*—*A. P.*—*R. S.*—*H. R.*—*J. A.*—*W. B. H.*—*C. D. B.*—*Rev. Geo. H.*—*Lieut. Col. Prain*—*J. H. L.*—*G. W.*—*T. H.*



THE

Gardeners' Chronicle

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CHOICE VARIETIES OF BRITISH FERNS.

I PROPOSE in this article to write mainly of choice varieties of British Ferns that I have either found growing wild, or that have been raised by myself from spores during the course of some 30 years of Fern-study and culture. It has too frequently been my lot to pronounce very disappointing verdicts on sports or quasi-sports submitted for my opinion, learning later, in some cases, that my reputation as a judge had been utterly shattered thereby in the opinion of the raisers of the presumed "gems." In the following remarks, it is perhaps unfortunate that I am a self-elected judge of my own favourites, but I must plead that, so far as I know, my favourable verdicts have been backed by all who are best qualified to judge. In the first place, then, I will put *Blechnum spicant concinnum* (Druery), because it was my first good find in 1881, and it still stands unrivalled in its particular class. The common *Blechnum* or Hard Fern has once-divided fronds, with a lance-shaped outline, that is, they are narrow

at the bottom, with short side divisions, which gradually lengthen towards the middle and taper rapidly to a blunt top. My variety, that I found coyly hidden, all but the tip of one slender frond, in a mass of seedlings in a roadside dyke on Exmoor, has fronds of the same width from end to end, all the side divisions being reduced to round saw-toothed discs like scallop shells, of which each frond imitates a string. About an inch of such a string was displayed to view in a bunch of ordinary fronds, and on tracing this to its source, six perfectly characterised fronds springing from one centre indicated the discovery of an unique and fixed variety, whence I immediately contracted an attack of Fern fever, which soon became incurable. I did not proceed, as some persons would have done, to cut off these fronds for herbarium specimens, and thereby destroy the find, but lifted the whole plant carefully, wrapped the roots in damp moss, and in course of time obtained a fine, robust, and typical specimen, which produced fertile fronds with spores, and these furnished me with several hundred plants, all of which were true to the new type. Since that time about a dozen different varieties of the same species have fallen to my lot; in one or two of these the narrow saw-toothed character is partially developed, but not one is equal to my original plant in this characteristic. In the Lady Ferns (*Athyrium filix fœmina*), I have been more fortunate, both as a finder and as a raiser of novelties. *A. f. cristatum* Kilrushense is by far the most beautiful wild-ling of all its congeners yet found; its long, graceful pendulous tassels having countless strands. The finding of this Fern at Kilrush, in Ireland, was quite by accident. Imagine a square ditch for drainage, a yard deep and as much wide, the sides clothed with *Blechnums* and other Ferns, and the top covered in with Brambles, Bracken, &c., so that it was just possible to creep along below these and inspect the Ferns beneath. Two youngsters, my guides, for I had only just arrived, make their way along the outside of the ditch and, out of sight, one of them says something to me which I cannot quite hear, and somewhat impatiently I stop, push aside the Bramble and Bracken aforesaid to get near enough to hear, and in this gap, on the outer side, is a poor, little, crushed Lady Fern. I do not hear what the child says, for I instantly note the tassels and recognise a fixed variation, though how good it was I did not know until two years later, when, after a spell of stunted growth, due possibly to damage, it became a robust, full-sized specimen, pronounced by other and better judges than myself, an easy first among wild forms, and unique in its way amongst those obtained by selection. Col. Jones, one of the pioneers of British Fern culture, had a pretty fancy that a good fairy always attended the conscientious Fern-hunter, and if he were otherwise unsuccessful, would create a "sport" for his delectation, and in the case of the plant just cited, it would certainly seem as if such a fairy had inspired the child's remark, to which the discovery was undoubtedly due. My next unique example is also a Lady Fern—*A. f. revolvens*—and in this the side divisions turn back so that the frond forms almost a tube.

The side divisions themselves are convex,

and all their tips, as do those of the fronds themselves, turn spirally, ringlet-fashion, with charming effect. Here, again, fortune favoured me in its discovery. I was stopping at a cousin's house in Scotland, lamed with a sprained ankle. Ordinarily, when starting on a Fern-hunting expedition, I make straight for good ground at a distance, but, being lame, I could only hobble with the aid of a stick a hundred yards or so from the house, the result being the discovery of this beautiful form in a gully close by, where two beautiful, curly fronds peeped out below a mass of commoner ones. *Lastrea montana cristata gracilis* (Druery), a graceful crested form of the Lemon-scented Fern, fell to my lot in a manner I have too often described to repeat here in detail. Suffice to say, the clump of crowns (33) weighed about 1½ cwt., and had to be lifted by two men and conveyed by a horse and cart to the Dartmoor village where I was stopping. The foregoing varieties represent what I consider to be the choicest of my wild "finds," but I have discovered many others, all interesting certainly, but more on the lines of existing forms. I will confine my remarks to what has been done in the direction of cultural selection. I have been peculiarly favoured, and that quite unexpectedly, by the sudden sporting of my plants. My strain of Lady Ferns of the plumose superbum type in two generations utterly eclipsed anything previously known in the species. A finely-cut, uncrested Lady Fern (*A. f. plumosum elegans* Parsons), a descendant of *A. f. Axminster plumosum*, yielded a batch of seedlings that were all crested save two, and the best of the crested ones gave two sections of descendants, the one crested, the other plain, both simply exquisite plumose forms, which require to be seen to be appreciated. The sowing resulted in at least a score of distinct varieties, and the whole batch formed one of those unanticipated triumphs which occasionally so richly reward the observant cultivator. A person who has not experienced it cannot comprehend the pleasure of watching such plants develop from the first promise noted by a keen eye in the early fronds, and the gradual fulfilment step by step in the later ones, each creating a fresh surprise and delight, until the final perfection of a full specimen is reached. With the wonderful Shield Ferns (*Polystichum*) I have not been very successful as a finder of rare forms, but it has been my good fortune to have novelties raised from spores, and these, again, in a very unexpected fashion. In 1874 a farm labourer found a Shield Fern (*P. aculeatum pulcherrimum*) in a hedge near Dr. Wills' house in Dorset. Dr. Wills was an assiduous and successful Fern-hunter, and had, as he presumed, exhausted the varieties in his immediate vicinity. Yet this Fern, which surpassed anything he had found himself, was dragged out of the hedge close by and brought to him, because, as the person who found it said, it seemed "funny," or words to that effect. From that time, and until three or four years since, it was deemed to be perfectly barren, and its long, slenderly-divided fronds, with peculiarly gracefully overlapped tips, did not seem to possess the capability of bearing spores. Some years

ago I gave part of my plant to my neighbour, Mr. C. B. Green, who treated the division so well that a huge, robust plant resulted, upon which Dr. Stansfield and myself discovered some spores. These were gathered and sown by both Mr. Green and myself, with the result that a batch of very beautiful plants has resulted. Amongst the brood are some four or five reversions to the ancestral form, one or two promise to resemble the parent, but the majority promise to excel it in beauty. Some half-a-dozen of these seedlings have fronds of such a delicate silken and attenuated division as to resemble

DIOSPYROS KAKI.

THERE are good reasons for believing that the Japanese Persimmon or Date Plum, *Diospyros Kaki*, is a hardy tree in the warmer parts of the British Isles, if not in every part where good Apples can be grown. For some reason or other it has been treated as being too tender to thrive out-of-doors, but there are now young trees outside at Kew, which have stood the cold of the last two winters without injury. When *Aucuba japonica* was first introduced to this country it was grown under glass, and 25 years ago there was a collection of named varieties of it in the temperate house at Kew. Professor Sargent holds that the *Kaki* is much hardier than is commonly supposed. He suggests that certain

(see fig. 9). The female flowers (see fig. 8) are yellow, with a green calyx, and they are followed by fruits without fertilisation, there being no male plant at Kew. There is, therefore, no seed, the whole of the contents of the thin, tough skin of the fruit being, when dead ripe, a mass of soft, juicy, sweet, strong-flavoured pulp, requiring a spoon to eat it with comfort. The treatment afforded the Kew tree is the same as that recommended for Peaches. It has fruited every year for the last 13 years. The fruits hang on the tree till April, although they are fully grown and appear ripe in October, when the flesh is still hard. Professor Sargent says the Japanese eat the fruits when they are as hard as paving stones! W. W.



FIG. 8.—FEMALE FLOWERS OF *DIOSPYROS KAKI*, FROM A PLANT GROWING IN THE SUCCULENT HOUSE, ROYAL GARDENS, KEW.
(Floral details magn. 4.)

nothing in the genus hitherto seen. One of my own raising may justifiably, I think, be regarded as the best of the batch, and I propose to christen it *P. aculeatum gracillissimum*. Some of the others, instead of having this gracile character, are greatly improved types of the parental form, so that in this case, as with the Lady Ferns, a new breed or strain has been the reward of sowing a minute and practically invisible pinch of spores, derived, be it noted, from a thoroughbred plant. Chas. T. Druery, V.M.H., F.L.S.

varieties that may have originated in the warmer parts of Japan, when introduced into Europe and the United States, proved tender; but that the varieties grown in Pekin and Central Japan would be capable of thriving in a lower temperature. It is certainly worth the while of fruit-growers in this country to try them, for the tree is decidedly handsome, particularly when covered with large peach-like fruits, and the fruit itself is excellent for dessert.

There is a small tree of *D. Kaki* in the succulent house at Kew, which fruits every year, the fruit being of the size and colour of a large first-class Tomato of the "Conference" type

THE CULTIVATION OF STRAWBERRIES.

THIS fruit has been cultivated from time immemorial, and many details of culture have been handed down from past times, garnished probably with much that is hypothetical, yet with many a maxim that modern cultivators may well heed.

A rich, fairly heavy loam on a gentle slope forms a favourable rooting medium for the Strawberry. Land from which a winter crop has been taken should be deeply trenched in May, and be dressed with one cubic yard of fresh farmyard manure to every 108 square yards of

ground, but if the preceding crop has exhausted the soil, add one-third more dung. The ground should also be enriched with three barrow-loads of wood ashes from the garden fire, and half this quantity of old pounded lime rubble. It is important that the digging should be thorough, and the whole of the manure, ashes and lime, evenly and thoroughly incorporated with the soil. Ply the hoe in fine weather to destroy any seedling weeds which may appear.

In preparing the layers, use clean pots, and

plants from their parents, and before doing this see if any roots protrude from the bottom of the pots, for the presence of these may be taken as a guide in severing the stolons. At this period the ground which is to receive the young plants must be thoroughly hoed, and if it is not pretty firm it must be rolled or trodden to consolidate it. Plant in rows placed two feet apart, but first ascertain that the plants are not dry at their roots. Put the plants at two feet apart in the drills. When planting, see that the soil is pressed firmly

good rotten farmyard manure or fowls' dung—pigeons' dung is spoken very highly of for this crop, but I have never used this substance for Strawberries, so cannot confirm the statement. When the flower trusses appear, place a wisp of straw beneath them to keep the fruits clean, and to prevent them being injured by rains. In these gardens the plants are not retained after they have been planted two years. They fruit well the first year under the above treatment, and in the second year also. After the first fruiting

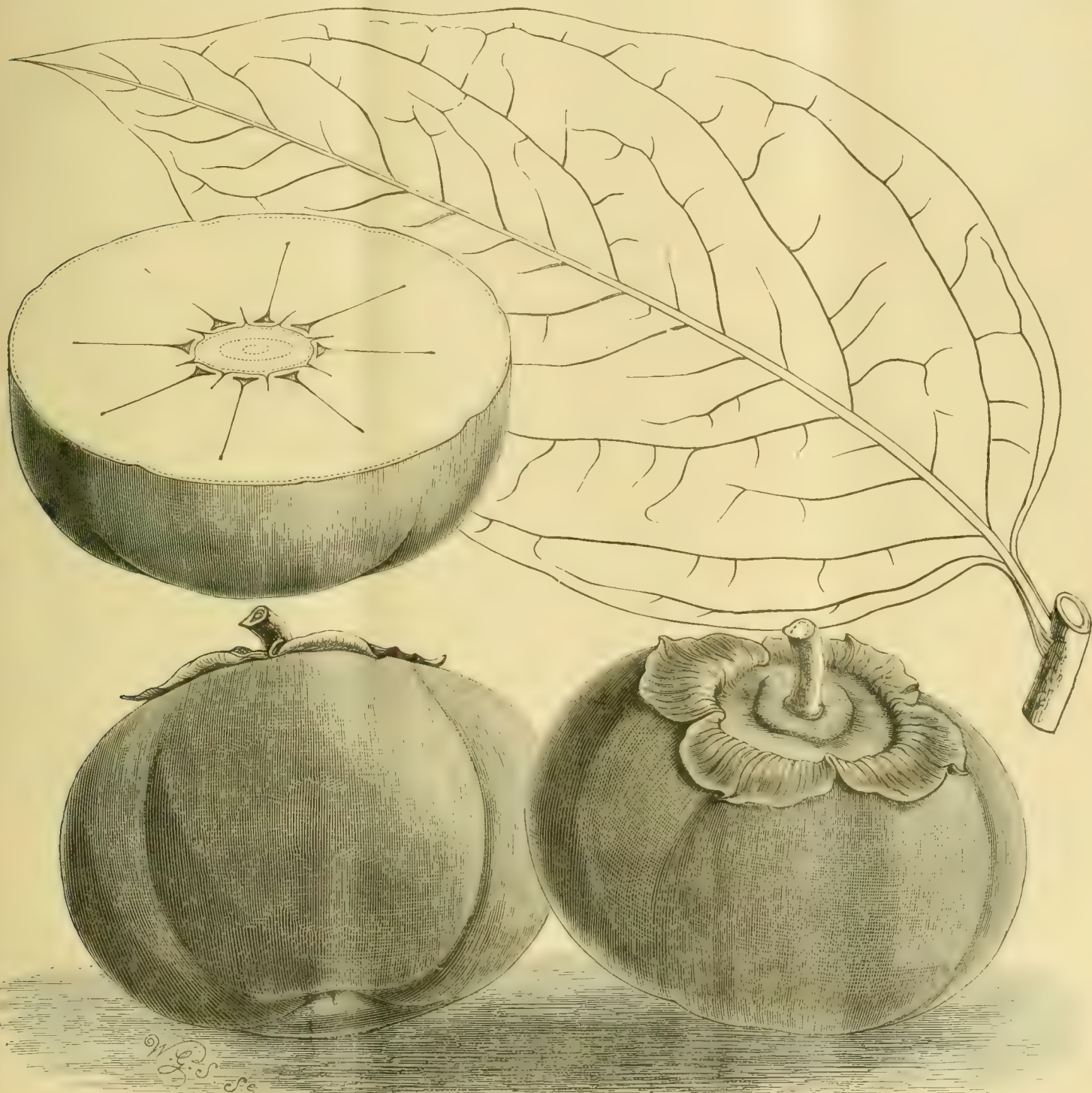


FIG. 9.—FRUITS OF *DIOSPYROS KAKI*, VAR. *COSTATA*, GROWN IN THE ISLE OF WIGHT. (See page 22.)

fill them with loam made mellow by the addition of some sifted leaf soil. If enough ground is available, it is an advantage to have separate plants for the purpose of providing runners only, and these stock plants should have their flower trusses removed. Plunge the tiny pots to their rims, and with pegs made from bracken fasten the young growths in the soil of the pots. If the weather is dry, occasional waterings must be given. Do not separate too early the young

around the "ball," which should be placed at a proper depth in the soil. It may be necessary to afford water after planting, but in any case, first level the ground by hoeing or raking out the footmarks. Keep down weeds by the use of the hoe, and pinch out all runners. In October afford a dressing of 28 lb. of fresh superphosphate on every 108 square yards of land, and either hoe or lightly fork it in with a fork. At the latter part of February apply a mulch of

season the ground is cleaned, a sprinkling of superphosphate is given in October and a heavy mulching of manure in February. With regard to the question of varieties, Royal Sovereign is our best kind; Sir Joseph Paxton, President, and Sensation are also in favour here. For forcing we use the first-mentioned variety, and the plants are layered direct into 6-inch pots and kept actively growing for as long a period as possible. H. W., *Trevince*.

FOREIGN CORRESPONDENCE.

POLYGONUM BALDSCHUANICUM.

WITH reference to a note published on p. 399, vol. xli., respecting this useful plant, I would say that it has for years been grown in Switzerland, and there attains to a considerable size. It flowers, not merely after June, but from the middle of April until the end of autumn.

I have a plant of this beautiful Turkish species that covers a large surface, and has been laden with blossoms since April 12; a few days ago we gathered some ripe fruits from it. It is sometimes stated that these seeds are not capable of germinating, but this is not true, for few seeds germinate as well and rapidly as do those of *Polygonum Baldschuanicum*, provided that they are sown directly after they are gathered. I have raised thousands of plants from seeds sown in autumn as soon as ripe, or early in spring. The fact that this is seldom done is the reason for the belief that seed-raising is difficult.

ERITRICHIMUM NANUM.

THE cultivation of this plant has for years been a subject of discussion in the English horticultural Press. I have often proved the possibility of raising *Eritrichium nanum* from seeds and flowering it in England. Some years ago I saw in the garden of Sir Charles Ellis, at Haslemere, two pans of the *Eritrichium* in full bloom and perfect condition. They were seedlings raised on a hot-bed and kept dry in a cool house. We have now, at Floraire, seedling plants of *Eritrichium* which interest many, and I shall be pleased to show them to any English visitors who may come here this summer. Floraire is twenty minutes' tram ride from Molard, Geneva. There is no time to be lost by those who would see our *Eritrichium* and the wall planted with Alpines now in flower. H. Correvoon, Floraire, Chêne-Bourg, Geneva.

COLONIAL NOTES.

ORANGES FROM AUSTRALIA.

THE *Sydney Mail* for May 22 last states that it was proposed to ship 4,500 cases of citrus fruits to London from Sydney by the R.M.S. "Orontava," on June 29. At a recent meeting of fruit-growers in Sydney, it was stated that there would be a prolific crop of Oranges this season, and probably prices locally would be very low. A large quantity of the yield will be available for export, and as the consignment will reach London at the best time for exporters, namely, when the market there was bare of citrus fruits, the prospects of good returns were regarded as very bright. Fruit-growers, however, have not made much response when called upon to assist the movement. In the past, some of the consignments of citrus fruits to England have been failures, and others have given good financial returns. When the fruit was landed in good condition, the shippers have realised up to 18s. for a case of about 150 Oranges. The A. F. and P. Company will make all the shipping arrangements, and the cases will be practically what are known as the bushel size, as they will hold 150 Oranges 2½ inches in diameter. It is desired that only clean fruit of the best quality, and graded so as to have no variation in size in a case, should be sent. When clipped, the fruit, it was recommended, should be showing the ripening colour, in preference to being on the green side. The freight charge will be 65s. per ton, equal to 3s. 1d. per case. The cost of the cases will be 9d. each. The opinion was expressed that the temperature in the steamers' cool chamber should be maintained at from 40° to 50°. The packing and wrapping of each

Orange with wax paper, and stowing on the ship would have to be carried out carefully. This precaution, it was considered necessary, as one agent, who spent a day on a wharf watching the shipping of fruit, said he saw some cases knocked about on the wharf as if they were merely old boots. The grower will be charged 3d. per case.

THE USES OF LIME.*

THE effect of lime when applied to garden soils is often so beneficial to future crops, we reproduce the following information on the uses of lime in agriculture, recently issued by the Board of Agriculture and Fisheries. Owing to the intensive culture practised in gardens, and the frequent applications of farmyard and other manures they receive, occasional dressings of lime are essential.

"The practice of liming or chalking the soil is one of the oldest and most widely-spread operations of British agriculture; unfortunately for many districts, it is a custom that is less observed at the present time than probably at any other period since farming became an organised industry. Until about 40 years ago lime was much more extensively used in agricultural practice than it is to-day.

How is it that the practice of liming has fallen so much into disuse? It may be said that, in the main, it is due to (1) increased cost of labour; (2) the increased use of artificial manures; (3) the reduction in the value of corn crops. Several common manures contain lime, but a clear distinction must be drawn between free lime, as it exists in quicklime or slaked lime, and the same combined with an acid, as in bones, where it is combined with phosphoric acid, or in gypsum, where it is combined with sulphuric acid. What is necessary for the soil is not so much the chemical substance lime, but a base, i.e., something capable of combining with the acids produced naturally or artificially in the soil. In quicklime or in slaked lime this base is found, and nothing else. Chalk and all natural limestones contain lime combined with carbonic acid, which, however, is so weak and acid that it is easily turned out and does not interfere with the basic properties of the lime, whereas in bones or gypsum the lime is already completely saturated with strong acids, and in superphosphate there is even an excess of acid, which demands more lime from the soil to neutralise it.

Quicklime and slaked lime when applied to the soil quickly go back to the state of carbonate of lime or chalk in which they existed before they were "burnt" in the kiln, hence it is really this substance, carbonate of lime, that we denote when we speak of "lime" in the soil. The superiority of burnt lime over chalk or limestone for application to the soil lies simply in the fact that it falls naturally into a fine state of division, some of it also passing into solution, so that it is more easily disseminated throughout the soil and acts with greater rapidity and in smaller quantities. But to return to the point in question, only freshly burnt (quick) or slaked lime, chalk, limestone, marl and basic slag contain "lime" in the farmer's sense, i.e., in the form of a base capable of neutralising acids; in bones, in superphosphate, and in gypsum the lime is combined with acids, and is no longer capable of acting as a base.

Besides its indirect value in neutralising acids in the soil lime has several other uses, all of which are of importance to the farmer (and gardener). These uses may be given as follow:—

1. Lime improves the nature of the soil by coagulating the finest particles of clay and

rendering the land more open and friable. Thus drainage goes on more readily, the land is warmer, and it is more easily worked to a good tilth. It is difficult to exaggerate the value of this action of lime on the heavier soils; it is frequently possible to secure a seed bed when the unlimed land is still too wet to work, and the character of the crop may depend as much upon securing a good tilth as upon manuring.

2. Lime is an essential plant food, and without it soils cannot produce good crops. Soils are generally considered to be deficient in lime when they contain less than from .5 to 1 per cent. Some soils, however, which are provided with a considerable amount of organic matter may respond to lime although they contain much more than these amounts.

3. The insoluble reserves of nitrogenous and potassic material in the soil are brought into action and rendered available for the plant by the presence of lime. The following table shows the result of applying in January, 1903, 2,000 lb. per acre of ground quicklime to some of the grass plots at Rothamsted, where there was a good deal of residue from past manuring locked up in the soil:—

Year.	Plot 7.		Plot 9.	
	Yield with mineral manures only.		Yield with complete artificial manures.	
	Unlimed.	Limed.	Unlimed.	Limed.
1903	Cwt. 49.5	Cwt. 51.9	Cwt. 50.1	Cwt. 69.5
1904	61.9	61.8	63.7	69.8
1905	44.3	47.2	36.9	52.2
1906	34.4	41.4	39.0	53.0

4. The leguminous crops usually cultivated on the farm flourish better when a good supply of lime is present in the soil. Clover, in particular, is very intolerant of acid soil conditions, and is much more subject to Clover sickness when lime is deficient.

5. It seems to be established that the soil organism (*Asotobacter*) which fixes nitrogen without the aid of leguminous plants, and is probably a great factor in the gain of fertility when land is laid down to grass, cannot develop properly unless a good supply of carbonate of lime is present.

6. Lime in one form or another is the best remedy for finger-and-toe disease* in Turnips and Swedes. These root crops are always liable to the disease when the soil is deficient in lime.

The fertility of many farms to-day is undoubtedly due to the liming and chalking that was done by the farmers of the eighteenth and earlier centuries; they, indeed, made the soil, for it is through their labours that it remains in profitable cultivation at the present time. Owing to the very large amount of chalk and lime which were then applied, it has been possible for later generations to live upon the capital thus accumulated and dispense with any expenditure of their own in this direction. But this spending process cannot continue indefinitely, for natural causes alone—the percolating rainwater—are steadily removing the lime in the surface soil; for example, the Rothamsted soil, which at the beginning of the nineteenth century must have contained something like a hundred tons of chalk per acre, has now less than fifty, and many other soils which started with a smaller initial stock are beginning to run dangerously short. In many parts of the country there is evidence that the land, especially on the heavier soils, is in need of liming, and though it might not be wise to return to the old heavy dressings of six to ten tons to the acre, a much smaller quantity, half a ton or so per acre, could be profitably applied at least once in the course of each rotation."

(To be continued.)

* Leaflet No. 170, issued by the Board of Agriculture and Fisheries.

* See Leaflet No. 77 (Finger-and-Toe in Turnips).

THE ROSARY.

ROSE FORTUNE'S YELLOW.

At fig. 10 is reproduced an illustration of a bouquet of Roses, comprised of flowers of the charming variety Fortune's Yellow, the blooms

Wantage. Mr. W. Fyfe, who has the charge of the gardens at Lockinge, succeeds in flowering the plant every season in one of the plant houses, and he has frequently exhibited beautiful flowers at the meetings of the Royal Horticultural Society. To Mr. Fyfe we are indebted for our illustration, and readers may learn the

scribed in a note on p. 5. There is no "brick colour" in the blossoms, but these are of a beautiful deep rosy purple. It is more than semi-double, but has no perfume, which its description in Monsieur Cochet's catalogue led me to expect it would have. I have also coming into flower, but not yet open, another hybrid from the same raiser named Rosier à parfum, which is said to be the sweetest Rose known, and yielding far the largest proportion of the attar or essential oil of Roses of any variety. I may also mention another very beautiful hybrid, though not quite so new as the above-named varieties. It is Souvenir de Christopher Cochet, and is an immense improvement on the still older variety Double Blanc de Coubert, being fully double and of absolutely pure white. This should be in every collection of such Roses. *W. E. Gumbleton, Belgrove, Queenstown, Co. Cork.*

THE ROSE PERGOLA AT KEW.

THE Rose pergola illustrated in last week's issue was constructed in its present form about six years ago. Situated between the herbaceous ground and the rockery, the pergola is rather more than 200 yards long, 13 feet wide, and 9 feet 6 inches high. It is constructed of iron; the uprights are placed 17 feet apart opposite each other along both sides of the path. Over the path they are connected by iron rods and along the sides with chains. Some 60 varieties in all are planted. In one or two instances the same sort is growing on different parts of the pergola, but, generally speaking, there are two plants of each, one on either side of the path. Two varieties were planted against each upright when the pergola was first furnished, the idea being to grow a variety of moderate growth up the pillar, and a vigorous one over the path and along the chains. This idea has not worked very well, and in many instances, unless the Roses are in flower, it is difficult to see where one sort begins and the other terminates. *D. D.*

HARDY FLOWERING PLANTS.

THE GILLENIAS.

AMONGST the more ornamental of hardy flowering plants are the Gillenias—pretty Spiræa-like plants of elegant habit and appearance, but although they are moderately well known in gardens they are not so largely cultivated as their merits deserve.

Only two species are in cultivation, and both are natives of north-east America, where they are found in woodlands. In this country they are often planted in dry and sunny borders, whereas they require partial shade and prefer a somewhat moist border. *Gil'enia stipulacea* and *G. trifoliata* bear a considerable resemblance to each other, and are sometimes confused in gardens.

Of the two, *G. trifoliata* is the better garden plant, not only because its individual flowers are larger than those of its congener, but also on account of the greater number of blooms it produces, and the possession of a persistent red calyx which are very effective. The flowers are much larger than those of the *Spiræas*.

Both species grow to about 2 or 2½ feet in height, and they are exceedingly ornamental when in their graceful and slender leafy stems and pretty flowers. These latter are white and sometimes red in *G. trifoliata*, those of *G. stipulacea* being white tipped with pink. The latter plant is also more pubescent than *G. trifoliata*, while the leaves are also narrower.

They are increased by division or by seeds, which should either be sown directly they are ripe or in the following spring under glass.

G. stipulacea is known as the American *Ipecacuanha*; *G. trifoliata* as Indian Physic or Bowman's Root. Both species flower in this country from June to August. *S. Arnott.*



FIG. 10.—ROSE FORTUNE'S YELLOW.

of which are of a shade of buff marked irregularly with crimson. This Rose has been the subject of numerous articles in these pages, but it has proved to be a shy-blooming variety under cultivation. There are, however, instances where success has been obtained persistently, and a very good one is found in the gardens attached to Lockinge, Berkshire, the residence of Lady

details of the cultivation afforded this Rose at Lockinge by reference to an article by Mr. Fyfe in our issue for March 21, 1903, p. 178.

ROSA RUGOSA HYBRIDS.

I HAVE now in flower the beautiful new hybrid of *Rosa rugosa*, raised by Monsieur Gravereau, and named *Roseraie de l'Hay*, which was de-

PLANT NOTES.

IPOMOEAS.

THESE plants are not so common in English gardens as they were some years ago, the reason for which is, somewhat difficult to discover, unless it be lack of sunshine. There are many ways of displaying and employing the plants, as on rough fences, hiding objectionable buildings, or objects, and rambling over strong-growing shrubs, or pea-sticks. The best species is *I. rubro-cerulea*, from Mexico. If it is desired to grow this plant out-of-doors, in countries in which there are many dull and sunless days in the summer months, the seeds should be sown in gentle warmth in the early part of March, and be pricked off when a few true leaves have appeared, and potted two or three weeks later. In the month of May the plants should be transferred to large pots, and when there is no longer any frost to fear these may be sunk in the ground, and stout stakes 10 feet high given to each, to which the bine should be fastened. Means should be taken by placing cinders or pieces of slate under the pots to prevent the roots extending themselves in the outside soil. *F. M.*

ISMENE CALATHINA.

In the *Oesterreichische Garten-Zeitung* for June, 1907, appears an article by Mr. R. J. Mann concerning the cultivation of this species of *Amaryllideæ* and its employment in the garden. The plant is a native of Brazil, and does not withstand the trials of our winters out-of-doors; but it can be planted in the open in the spring to make its growth and to bloom in June and July. The bulbs must be taken up before frosts occur, and be wintered in a dry, frost-proof place. The greater worth of this bulbous plant consists in its ability to stand forcing like a Hyacinth or other so-called Dutch bulb. Certainly it is not adapted for early forcing, as its vegetation is not finished so early as that of a Hyacinth, and naturally it must have a season of rest before it is awakened to a new life; but, just as is the case with the Hyacinth, this rest period can be shortened very considerably by placing the bulbs in a warm and moist place. The blossoms having great beauty and a pleasant fragrance, the plant forms a valuable change to the forced Hyacinths, Tulips, and Narcissus usually found in gardens. As a cut bloom with long stalks, and of large size, *Ismene* will find as much favour with the public as the *Eucharis*, to which its blooms have some similarity. Treated like *Gloxinias*, the bulbs may be started in a warm-house, placing them in damp sand. In the course of two or three weeks the roots will show themselves, and the bulbs may then be potted singly or in two's and three's in pots of similar sizes, in rich soil, and provided with good drainage. The pots should be placed on a warm bed, and not kept dark as is the way with Hyacinths, &c. In about three weeks the leaves will begin to show, and the blooms will appear as soon as the leaves are fully developed. The flower buds appear at the top of the 16-inch tall shafts to the number of 3-5, which open in succession, but not so that all are open at one and the same time, as even when placed in a cool house the first bloom to open will be past its best before the next expands. As a period of 10 to 14 days elapses between the opening of the first bloom and the passing of the last, florists must take notice of this fact and act accordingly. A large flowered variety, *I. c. grandiflora*, has found its way into commerce. The bulbs will, with suitable cultivation, continue to flower for many years in succession if after flowering, and the leaves have turned to a yellow tint, the bulbs are kept in a perfectly dry condition. *F. M.*

TREES AND SHRUBS.

SOPHORA VICIIFOLIA.

THIS species is of comparatively recent introduction to British gardens. A native of Central and Western China, it was introduced to cultivation by Dr. Henry, who sent seeds, collected in the Province of Hupeh, to Kew in 1898, from which plants were raised which flowered in 1902. On the Chino-Tibetan frontier at elevations of from 9,000 to 13,500 feet it is said to form heaths 2 to 4 feet high of considerable extent on poor soils, and it would thus seem capable of withstanding both cold and drought as well as a poor-rooting medium—qualities which may make it valuable for planting in urban districts.

Near the north end of the succulent house at Kew is a small circular bed filled with *Sophora viciifolia*, which quite recently was a mass of bloom. The plants are low spinescent shrubs from 2 to 4 feet in height, clothed with vetch-like, pinnate leaves 1 to 2 inches long, with six to ten pairs of elliptic leaflets and a terminal one. The short, erect racemes are freely produced at the ends of axillary growths, and each raceme bears about one dozen pea-shaped flowers. The contrast presented by the violet-blue colour of the calyx and pedicels, and the milk-white petals is most effective. The species was figured in the *Botanical Magazine*, tab. 7,883. *H. Spooner.*

FREMONTIA CALIFORNICA.

THE author of that interesting work, *Trees and Shrubs for English Gardens*, mentions a fine plant of this *Fremontia* measuring 8 feet in height; at the present time there is in these gardens a bush with an average height of 13 feet, and the spread of the branches measures nearly 15 feet. The whole bush is covered with its yellow flowers and opening flower-buds.

It is rather unfortunate that this fine flowering shrub should be subject to a sudden collapse, but considering the other valuable qualities of the plant, this fact should not deter those who have suitable positions from adding *Fremontia californica* to their collections.

The plant flowers fairly well even when small.

ABUTILON VITIFOLIUM.

THIS is a very desirable and quick-growing shrub, suitable for a warm and sheltered border. Established seedlings in pots planted in these gardens in the open in the spring of 1904 have now attained to a height of 9 to 10 feet. Last summer only a few flowers were produced on these plants, but at the present time they are flowering freely. One specimen has been a perfect pyramid of flowers. It is satisfactory to know that plants of the size mentioned can be moved with safety. *H. S. Crag, Bournemouth.*

BUDDLEIA GLOBOSA.

THIS Chilean shrub has long, greyish, Willow-like leaves, and in its flowering season produces a profusion of globular heads of brilliant orange-coloured flowers. It is one of the most beautiful hardy exotic plants, and is worthy a place in every collection of shrubs. In the west and southern counties of this country the species succeeds admirably, and often forms a dense bush from 12 feet to 15 feet in height and measuring from 8 feet to 10 feet through. Frost rarely injures the plant to any appreciable extent. In villa gardens, providing the soil is of a light, rich, loamy nature, it forms an ideal subject for planting. Should pruning be necessary from considerations of space, the knife may be used without fear of permanently injuring the shrub. *F. G. Titcher.*

BUDDLEIA COLVILEI.

THIS species has been in full bloom on an open border here for the last three weeks. It is quite hardy, and is readily increased from cuttings of half-ripened wood inserted in August,

but to obtain the best results the bushes should be planted in a rich, loamy soil. The branches, which attain to a length of from 5 to 6 feet, are terminated by long panicles of beautiful rosy-red-coloured flowers, while at every axillary shoot an inflorescence, proportionate in size, is produced, making this shrub a very attractive feature in the garden. *J. D. Winter, Culzean Castle Gardens, Ayrshire, Scotland.*

THE AMERICAN GOOSEBERRY-MILDEW ATTACKING THE RED CURRANT.

WHEN investigating an outbreak of the American Gooseberry-mildew (*Sphaerotheca mors-uvæ*) in Norfolk a few days ago, I found that this mildew had passed from the affected Gooseberry bushes on to some Red Currant bushes which were growing intermixed with them.

The facts are as follow:—The Gooseberries, which are three-year-old bushes, were obtained last autumn from a certain nursery. Traces of the winter-stage of the American Gooseberry-mildew were still to be found on the young wood of these bushes, so it is evident that they were diseased when sent out from this nursery. A few weeks ago the owner noticed the white, powdery, summer-stage of the mildew on the berries and leaves of these bushes. At the time I visited the plantation, the mildew was vigorously attacking the young wood of the shoots, covering it, as well as most of the terminal leaves, with a white "mould." On the surface of some of the shoots the brown, scurfy spawn, bearing the fruit-conceptacles with the winter-spores, had already formed.

Intermixed with these Gooseberry bushes, and in the same row with them, were many one-year-old "Grape" Red Currant bushes, and the leaves of a number of these were being attacked by the American Gooseberry-mildew; white patches of the mildew being visible on the under-surface of the leaves. These facts show that the American Gooseberry-mildew is capable of at once attacking and living on the Red Currant, and does not require time to accustom itself gradually to this plant.

Cases of the American Gooseberry-mildew attacking the Red Currant have occurred in America, and, since this mildew has been introduced into Europe, in Ireland, and on the Continent.

In October last I recorded* a case of the European Gooseberry-mildew attacking Red Currant bushes. Although the two mildews are very similar in general appearance in their summer-stage, they can be separated easily under the microscope by certain distinctive characters shown by the shape, &c., of the spores (conidia). I should be glad if anyone meeting with a mildew on the Red Currant would kindly forward me a specimen to the address given below.

I may mention here that I have lately seen a case where some Gooseberry bushes were attacked by the European Gooseberry-mildew, in which the mildew was not confined (as is usually the case) to the leaves, but occurred also on the green berries. On some of the affected berries the characteristic fruit-conceptacles (perithecia) of this mildew occurred. Mr. F. Smith, of Loddington, Kent, has told me that some years ago the berries of some of his bushes were attacked in the same way, and Prof. Eriksson has recently recorded† and illustrated another case occurring in Sweden.

On the subject of the spread of the extremely destructive American Gooseberry-mildew, and the legislative steps now about to be taken against this new disease, I would refer readers to my articles published in this and other papers. *E. S. Salmon, F.L.S., Mycologist to the South-Eastern Agricultural College, Wye, Kent.*

* *Gardeners' Chronicle*, October 27, 1906.

† Meddel. Centralaust. forsoksv. jordbruks. Nr. 1, tockholm, 1907.



FIG. II.—STEWARTIA MALACHODENDRON. (See "Botanical Magazine" on p. 32.)

THE ALPINE GARDEN.

SAXIFRAGA AIZOON LUTEA.

DURING the past few years the aizoon section of the Saxifrage family has been enriched by the introduction of more than one good and distinct variety. Amongst other kinds are two bearing names suggestive of yellow or yellowish coloured blossoms, and of these the one bearing the varietal name *lutea* is much the better garden plant, but it cannot be regarded as a decidedly clear yellow-flowered variety. The flowers during their expansion and immediately afterwards are of pale primrose-yellow, but later they assume a creamy shade. I have a few seedlings raised with the object of obtaining a better yellow-flowered variety, and in this I hope to be successful. As a free-growing subject and one full of vigour, with profusion of flowering, the plant under notice is welcome. Not only is it free and profuse in its flowering, but the flowers are also long lived. Individually, the blossoms are large and of good form, and I regard its blossoms as the most shapely of all the flowers of this section of the Saxifrage. The inflorescence is about 9 inches high. The leaves are nearly oblong lanceolate in shape, with the rosettes lacking the cupped character so common in this section. The plant is easy of cultivation, and must not be confounded with *S. a. flavescens*, another variety having yellowish-coloured flowers, and apparently in growth and stature a counterpart of *S. a. minor*. *E. J.*

IRIS SIBIRICA "SNOW QUEEN."

SEVERAL new varieties of *Iris sibirica* have lately been introduced from Japan, where apparently they have been grown for generations. These new introductions are great improvements upon the original type known in gardens in this country, and are to be recommended for planting both in the water garden and in the flower border. The choicest of the new arrivals is named "Snow Queen." This plant attains to 3 feet in height, and has broad, robust foliage that is quite unlike that of most Siberian Irises, and more resembles that of *I. lœvigata*. The flower is exceptionally well balanced, and has broad, horizontally-erected falls, with drooping blades, inconspicuous style branches, and prettily frilled standard petals that are half the width of the blade. The flower is pure white, save for a slight suffusion of yellow in the claw. The substance of the flowers and their increased size and vigour suggest hybridity, one of the parents probably being a white variety of *I. Kämpferi*.

I. SIBIRICA ORIENTALIS

is an albino, and whereas most pure white forms are weaklings compared with the type from which they spring, in this variety increased vigour is seen. I have a few clumps growing in a cool and sequestered corner, where the sun cannot burn the petals, and the flowers have been a study in perfect outline and purity of colouring for many days. This *Iris* should find favour as a waterside plant. It has a vigorous constitution, and is best planted in groups or colonies.

IRIS DELAVAYI.

THIS beautiful species was introduced from Yunnan about 10 years ago, but it has not received that measure of popularity that its worth entitles it to. It is a tall, beardless *Iris* of free growth, larger than the *sibirica* type in every respect. It has close affinities with *I. orientalis* and *I. spuria*. Its best and most effective use in gardens is in waterside planting, where it should be grouped in colonies at the water's edge in the manner that *Iris pseudo-acorus* grows naturally. The leaf-growth, in addition to being very free, is elegant in the extreme, the leaves forming loose sheaves more than 3 feet in height: the leaf tips arch gracefully, and on the whole the foliage bears a resemblance to

that of a *Eulalia*. The flower-spikes reach 5 feet in height, and produce a succession of flowers, coloured as in *Iris reticulata*, the standards being nothing more than enlarged replicas of those of *I. reticulata*, whilst the fall petals have drooping, narrowed blades, that are slightly blotched with white at the bend of the claw. This *Iris* possesses grace and refinement; its flowers are unique amongst the grassy Irises in colour and in form. Cultivation is as easy in every respect in the case of the common Yellow *Iris* of English swamps. The flowering season commences at the end of June, and continues throughout July. Planting should be done in spring only. *G. B. Mallett.*

The Week's Work.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Dahlias.—These plants now require constant attention. Search must be made for such enemies as snails, earwigs, and caterpillars, which do much injury to the young, succulent growths, and the flower-buds. If extra large flowers are desired, the growths should be thinned, disbudding practised, and some of the younger shoots around the flower-buds of varieties with short stalks removed. Secure the plants from injury by wind, but do not bunch the shoots tightly. The *Dahlia* is a gross feeder, therefore some manurial assistance should be given; the ground being wet from the recent rains precludes the use of liquid manure, therefore lightly sprinkle the surface soil at intervals with some artificial manure.

Layering Carnations.—The easiest and most certain method of increasing the stock of these plants is by layering the growths. A batch of seedlings may produce some plants that possess a certain degree of merit, but the majority will prove inferior varieties, and it is better to increase plants of known worth by layering. This operation should be performed as soon as possible, so that the growths may form established plants before the winter sets in. Lightly disturb the surface soil around the plants with a hand fork before placing in position the sifted soil in which the layers will be pegged. These mounds of soil must be made fairly flat, or they will not readily admit water. The operator must keep the edge of his knife sharp, and the layers must be pegged firmly into the soil. Apply water carefully through a fine rose as often as may be necessary, and lightly damp the layers overhead towards the close of bright afternoons. The layers will form roots in about a month, when they should be carefully severed from the parent plants, preparatory to being transferred to their winter quarters.

Lavender.—As soon as the flowers on the lower half of the spikes are expanded, the inflorescences should be harvested. The flowers must be perfectly dry when they are gathered, or they will quickly become mildewed; and for the same reason they should be made into small bunches. The *Lavender* forms a good low hedge, and when so utilised, the best time to perform any necessary pruning is immediately after the flowering is over. This practice will allow sufficient time for the new growths to become hardened before winter sets in.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq., Norwood, Alloa, Clackmannanshire.

Young Vines that were planted in a new border in March last, and whose leading shoots were pinched when they had attained a length of 4 feet, should be again stopped as soon as the leading growths reach the top of the roof. Tie and pinch the lateral growths, and do not favour the development of gross wood by maintaining a warm and moist atmosphere in theinery. Admit air freely, and allow the top ventilators to remain open a trifle at night-time. Maintain a dry atmosphere, and permit a free circulation of air among the foliage. The atmospheric temperature at night should be 65° Fahr., and by day 80°; very little fire-heat should be employed, unless the weather is excessively cold. Do not allow the border to become dry at any time,

and when in doubt as to its condition of moisture, use the border-tester. Should red spider make its appearance, syringe the vines with clear water once daily.

Tomatos.—Early-fruiting plants in pots, from which the crop is nearly harvested, should now be removed, and their places given to a second batch. Pots 9 inches in diameter are suitable for these successional plants. Before re-stocking the house, it may be necessary to thoroughly cleanse it, especially if fungus disease or insect pests were present on the older plants. If only a single row of plants can be accommodated in the house, place the pots close together. Admit an abundance of outside air, both by day and night during the heat of summer. Plants in fruit and flower will require liberal supplies of water, and an application of liquid manure twice each week. All lateral growths must be removed, and the leading shoot should be stopped when it has reached to the top of the stake or trellis. If white fly is present, fumigate the house lightly with the XL-All insecticide.

Cucumbers.—Plants that have been fruiting for some time, and which show signs of exhaustion, should be destroyed and a fresh batch planted. Remove all the old soil from the top parts of the border, and replace it with fresh loam. When the young *Cucumber* plants have been planted, give a copious supply of tepid water to the roots.

Cucumbers in frames.—During dull weather, the female flowers will require pollinating with pollen obtained from the male flowers. When the young fruits are swelling, place a slate or a piece of glass under each fruit.

Melons in hot-beds.—The fruits should be placed on an inverted 6-inch flower pot, and be exposed to a maximum of sunlight. Remove any superfluous young growths. Apply a new lining of fermenting material to the frame when the heat of the bed is declining.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to LORD CLINTON, Bickton, East Devon.

The Loganberry.—The strong basal growths of the current season should be reduced to five or six of the more robust, and these should be secured to the wires or trellis work, so that they do not become broken or twisted at their bases. The *Loganberry* resembles the *Raspberry* in that it requires plenty of feeding during summer, especially when planted in light soil. The above remarks apply also to *Blackberries*.

Fruit trees on walls.—Pinch at the first leaf all sub-lateral growths on the Peach, Nectarine, and Apricot. See that no fruits are pressing too tightly on the wires or against nails, and if aphid or red spider are present on the foliage use means to combat them. The frequent hosing or syringing of all fruit trees trained against south, west, or east walls after a hot day is most beneficial, even if the trees are free from insect pests; these syringings promote a free growth of both wood and foliage. Keep narrow and shallow borders well supplied with moisture, using liquid manure whenever it is deemed necessary.

Hoeing.—The hoe should always be frequently used at this season in the fruit garden, for if the atmospheric conditions are wet, the weeds will need exterminating, and if dry the stirring of the ground will prevent excessive evaporation of moisture, besides promoting aeration of the soil.

Raspberries.—The ripening fruits must be protected from the birds. Nets, however light in weight, injure, more or less, the new canes, and their constant removal for gathering the fruits is often the cause of the points of the shoots becoming broken, and also the fruit-bearing laterals. The best plan is to form a kind of net cage over the rows by inserting a few posts in the ground, and tall enough to clear the canes, with pieces of wood on the top projecting some 18 inches on either side in the form of a T. Over this the nets may be placed without damaging the canes. Every advantage should be taken of sunshine for gathering the fruits for preserving, for they must be dry for this purpose. Thin out the young growths on autumn fruiting canes, and apply a mulching of manure, if this has not already been done.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Catascums, *Cynoches*, and *Mormodcs*.—These curious Orchids deserve to be more generally cultivated. The quaint distinctiveness of their flowers always attracts the attention of visitors, while some of them are of handsome appearance. Unfortunately these species are generally looked upon as being difficult to cultivate in such a manner as to keep them in good health, but if their requirements are carefully studied, successful cultivation is easily possible. At the present time these plants are growing rapidly, and they should be suspended on the lightest, or south, side of the East Indian house in such a manner that the foliage will be within a few inches of the glass. If the plants are rooting freely they will need an abundance of water, but if roots are not plentiful, water must be afforded less freely, as the tender growths would be liable to turn black and decay if the soil were made too wet. The flowers appear as the pseudo-bulbs become mature, and after the flowers are past the plants should be given more exposure to the sunshine, placing them, if practicable, in a position where fresh air may reach them at all times. While this ripening process is being carried out, the plants must be plentifully supplied with water at the roots until the new pseudo-bulbs are ripe and the leaves have fallen, when watering must be discontinued.

Chysis.—The various species of *Chysis* and their hybrids are now in full growth. The plants should be suspended in a warm, shady part of the Cattleya house, and they will require copious applications of water at the roots until their new growths have matured. Whether thrips attack the tender growths or not, our practice is to occasionally place the plants in a house that is being vaporised, and by such treatment the leaves are kept fresh and clean and free from unsightly markings which are often caused by insect pests.

Zygopetalums.—Such species as *Z. Perrenoudii*, *Z. Murrayanum*, *Z. Wiganianum*, *Z. Burkei*, *Z. brachypetalum*, *Z. triste*, *Z. Protheroeanum*, *Z. Ballii*, *Z. Mackayii*, *Z. crinitum*, and *Z. maxillare* all require similar treatment to that I have just recommended for *Chysis*. If small, yellow thrips once find their way low down in the young growths, it is difficult and almost impossible to eradicate them before much irreparable damage is done, for such growths as become infested with these troublesome insects rarely make further progress. These *Zygopetalums* thrive well in a cool, shady corner of the intermediate house, and now that growth is being made the plants should be thoroughly watered whenever the compost is dry. Plants of *Z. maxillare* and its variety *Z. m. Gautieri* that are growing on the stems of tree Ferns, upon pieces of which they are nearly always imported, should be suspended well up to the roof glass in the same house and as near to an open ventilator as is possible. Now that they are growing freely it is advisable to take them down every morning and thoroughly soak them in water. Should black or damp spots appear on the leaves of any of these *Zygopetalums* it will be necessary to ventilate their surroundings rather more freely and reduce the amount of moisture in the atmosphere.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Thyracanthus rutilans.—Young plants that were raised from cuttings last spring should now be ready for re-potting into their flowering pots. Use a compost consisting of two parts turfy loam, one part leaf-soil, and one part well-rotted manure, with the addition of some sand. After the roots have become active in the new soil, place the plants in a frame, keeping them well up to the glass to prevent the growth from becoming spindly. Syringe the plants, and close the frame, as early in the afternoon as is considered safe, in order to take advantage of the sun's heat. A little shading will be necessary during the hotter parts of the day in summer-time, but early in September shading may be discontinued, and the amount of atmospheric moisture can then be reduced, but do not withhold fire-heat or a check to the plants will result. Allow them to flower in a minimum atmospheric temperature of 60° at night-time, with rather more than this amount of heat during the day.

Keep a watch for red spider and thrips, and take preventive measures to combat these pests early.

Jacobinia (Justicia) carnea.—This plant will thrive under similar treatment to that recommended for *Thyracanthus*, but it is quicker in growth, and will flower when almost any size, and in small pots. *Jacobinias* are easily propagated; the young shoots root readily in the propagating frame if inserted in a light, sandy soil. If larger plants are required for flowering in the autumn, the points of the shoots should be pinched several times during the growing season, and the plants placed close to the glass; they should be re-potted as often as they require a shift. A plant sometimes described as *J. flavacoma* is really *Schaueria calyotricha*. It has yellow flowers, and affords a pleasing change to the pink flowers of *J. carnea*.

Climbers in stoves and greenhouses.—At this season of the year frequent attention is necessary, in order to regulate all climbers to the space allotted them, for if they become a tangled mass of growths, they will prove a nursery for insect pests. *Stephanotis*, *Dipladenias*, and *Cissus discolor* are all susceptible to attack by mealy bug; they should be closely watched for this pest, and, as a measure of precaution, sprayed occasionally with an insecticide. The growths should be thinned and regulated, the main shoots tied to the wires, and the lateral growths allowed to hang down naturally. *Allamandas*, being of a stiffer habit, are not adapted for this style of training, but the weaker growths should be cut out. If planted in tubs or confined borders, *Allamandas* must, when in full growth, be given copious supplies of water and manurial stimulants at intervals, for they are gross feeders. *Cobæas*, *Solanums*, *Bougainvilleas* and other climbers in cool houses will also need attention, weekly or fortnightly.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq., Cobham Park, Surrey.

Peas.—In order to prolong the season of this vegetable as much as possible, let sowings of early varieties be made at once. It should be remembered, however, that the plants from such sowings will have to make their growth during the hottest period of summer, and that the autumn may be cold and wet. The matter, therefore, is little more than a speculation, and the crop cannot in the smallest measure be depended upon. When the conditions prove to be favourable, this late crop is so appreciated that it compensates for any previous failures that may have been experienced. The seeds should be sown in such a position that the plants may be given temporary shelter during the hottest weather, but at other times enjoy full exposure to the sun, light, and air, especially on the approach of autumn.

New Potatoes.—If "new" tubers are desired at Christmas time, the Jersey Potatoes now being imported will provide excellent "seed" tubers for planting. Great care should be exercised in order to choose those having the skins properly "set," and which are therefore ripest. The ripening process should be assisted by fully exposing the tubers to the sunlight and air until the end of the present month, after which time they should be started into growth very steadily in boxes, previous to planting them in cold frames, which should be kept quite cool until autumn, when a little heat may be afforded. From this system we obtained very good results here last winter.

Mint.—Where a supply of Mint is required for forcing early in the year, cuttings should now be inserted in boxes, which should be filled with a compost of loam and leaf soil, but principally the latter material. Although it is easy to obtain a supply by simply lifting the roots in autumn or winter and placing them in heat, much stronger growths can be had from cuttings inserted as advised.

Cabbages.—Seeds should be sown at any time from the beginning to the end of the present month, according to the locality, which must of necessity be the guide both as to the date and the best varieties for cultivation. It often happens that a particular variety that is generally satisfactory in one district is not capable of yielding good results in another district,

although the standard of cultivation shall be equal in both cases.

Colewort.—This useful little Cabbage "turns" in at the end of the season, when Peas, Beans, and Cauliflowers are becoming very scarce. Seeds should be sown in two or three batches, the first at about the end of June, the second in the middle of the present month, and the third about the end of the same month. Although often two sowings prove to be sufficient the third sowing in other seasons is very useful.

Red Cabbage.—Sow seeds of the Red Cabbage for raising plants to be used for pickling. Better results may be expected from a sowing made at about this date than if it were left until later.

Garlic and Shallots, having by this date completed their growth, should now be lifted and spread out under lights, or in a vacant frame, or in any position where they can be protected from rains, but where they will be fully exposed to the light and air.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

Boating.—Very few parks in this country possess sufficiently large lakes to provide suitable boating facilities for the public. Those which are so favourably situated in this respect are exceedingly fortunate, as boating is always an attraction, and can be made a considerable source of revenue to the department concerned. In such cases it is usually the practice for the boats to be managed by a contractor, who pays a stated sum per annum for the privilege of hiring them out to visitors. In one or two towns the parks department works the boats with its regular staff, and thus keeps the whole thing in its own hands. This, for several reasons, is undoubtedly the better course to pursue. In the first place it is rarely satisfactory having men employed in parks who are not under the direct control of the chief official. From the public standpoint it is only right that where it is necessary to make a charge for any privilege in connection with the use of a park, any profit that may be derived from it should be applied for the benefit of the public, and not go into the pocket of a private individual.

Custom in London.—The London Parks Department has within recent years taken over the boating from its contractor, and now makes considerably more profit than under the old system, notwithstanding the fact that the hiring-out fees have been greatly reduced.

Types of boat.—Where fishing is provided, it is well to have two kinds of boats on hire. One kind should be of the punt type for the use of fishermen, and the other the light skiff, suitable for rowing purposes. Whether the boats belong to the park authorities or to a private contractor, it is advisable to have them all tested, and the maximum number each is allowed to carry distinctly marked on every boat. If this is not done, and the boats are allowed to be overcrowded, accidents of a serious character are almost sure to take place. As a further preventive of accidents on the water, it is customary to have a recognised rule of the "road." By keeping to the left or right, as the rule may be, the danger of collisions and their consequent damage to the boats is reduced to a minimum.

Management expenses.—If the boating is to be made to pay a profit, it is essential to keep the management and working expenses to the lowest possible sum. One means to this end is by only allowing admittance to the boating stage through a register turnstile. Besides furnishing a proper check upon the receipts, this enables one man to keep a whole crowd under control, and by permitting only the number for whom boats are available to get on to the stage at one time, it is quite possible for three or four men to easily attend to 40 or 50 boats.

Electric launch.—In some parks an electric launch is kept, in addition to the small pleasure boats. These are always well patronised by children during Bank and other holidays. A house for storing the boats during the winter months, and in which painting and repairing can be done during inclement weather, is necessary where boating is carried on to any great extent.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JULY 16—

Opening of the Laboratory and Research Station at Wisley by Lord Avebury.
Nat. Sweet Pea Soc. Sh., Horticultural Hall, Westminster.
Saltaire Rose Sh.

WEDNESDAY, JULY 17—

Woodbridge Fl. Sh.
Women's Agric. and Hort. Union Exh. in Bot. Gardens, Regent's Park.

SATURDAY, JULY 20—German Gard. Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—63° 1'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, July 10 (6 P.M.): Max. 61°; Min. 51°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, July 11 (10 A.M.): Bar. 30° 4'; Temp., 62°; Weather—Bright sunshine.

PROVINCES.—Wednesday, July 10 (6 P.M.): Max. 55°. Ireland, N.W.; Min. 51°, Yorkshire.

SALES FOR THE ENSUING WEEK.

TUESDAY—

The beneficial interest in the lease of the Oxford Nursery, Oxford Road, Gunnersbury, at 12; and afterwards the whole of the stock of Plants, by Protheroe & Morris.

WEDNESDAY, THURSDAY AND FRIDAY—

The second portion of the Woodlands collection of Orchids at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

The Holland House Show.

Visitors to the Royal Horticultural Society's summer show at Holland House, of which a detailed report appears in our present issue, could hardly have failed to be impressed with the high quality of the exhibits. The numerous groups of plants and flowers were deserving of praise, whether regarded as evidence of successful cultivation, or as selections of the choicest plants obtainable for the embellishment of the garden. In the large tent where the Orchids were exhibited on the central tables, there were comprehensive groups of miscellaneous plants that successfully vied with the Orchids for a share of appreciation. The "Sherwood" Silver Cup, being reserved on this occasion for the best exhibit of hardy plants or flowers, was awarded to one of these groups exhibited by Mr. Bradshaw, an amateur cultivator. There were many collections of hardy plants and garden flowers. All were interesting, and such exhibits as those of Mr. Amos Perry, Messrs. R. Wallace and Co., and Messrs W. Cutbush and Sons, that contained representations of water gardens, with Nymphaeas and other aquatic plants growing in them, were most charming.

Roses being now at their best, the groups of Messrs. Paul and Son, Messrs. R. and G. Cuthbert and other exhibitors were even more profuse of flower than the Rose groups exhibited at the Temple Show, whilst several new varieties of the Rose were shown by Messrs. A. Dickson and Son.

Messrs. Jas. Veitch and Sons' group of ornamental foliage plants, Messrs. J. Peed and Sons' Caladiums, Mr. L. R. Russell's stove foliage plants, and other ornamental-leaved plants from Messrs. W. Bull and Sons were remarkable for the excellent cultivation they illustrated as applied to rare and choice species. Most of these groups were arranged in the tent containing the Orchids, and so we might continue enumerating those that were shown in other tents, but for details of these we must refer readers to the report.

There were not many novelties of outstanding importance presented for the inspection of the various committees, but a species of Crinum, introduced from Burmah, and shown by Colonel Beddome, created considerable interest. The plant was growing in a pot having a diameter of only three inches, yet it had produced two inflorescences, which together bore 13 flowers and flower-buds. Most species of Crinum are large-growing plants, which usually flower only after attaining to considerable dimensions; the present species, therefore, which deservedly obtained a First-class Certificate from the Floral Committee, appeared extremely small and precocious. It has been named *C. Mearsii*, and may possibly prove to have close affinity to *C. humile*, of which a figure is given in the *Botanical Magazine*, tab. 2,636.

Another novelty likely to become valuable as a garden plant was the hybrid Crinum, raised by Mr. H. J. Elwes from the species *C. Moorei* and *C. americanum*. The flowers of the hybrid are coloured almost exactly as those of the Belladonna Lily (*Amaryllis Belladonna*). A remarkable Odontoglossum of the blotched type of flower was shown by Messrs. Sander and Sons, and a very richly coloured *Laelio-Cattleya* shown by M. Lambeau, Brussels, obtained a First-class Certificate from the Orchid Committee. Details of these and other novelties are given in the report.

The invitation kindly given the Society by Mary Countess of Ilchester, to hold a summer show in the paddock in front of her delightful Elizabethan residence affords the council an opportunity to entertain the members of the Committees at luncheon. Sir Trevor Lawrence, who presided at this function on Tuesday last, referred to the approaching ceremony in connection with the opening of the laboratory and research station in the Wisley Gardens, remarking that, following this event, the Society would be in a position to impart instruction to its students on the more advanced scientific principles that underlie horticultural practice. The President made a further remark which directly affects the convenience of those who visit such shows as are held in the Temple Gardens and at Holland House. He said that the firms who supply the tents must be asked whether they cannot use some material that is more transparent than that generally employed. Exhibitors will have every sympathy with any effort that is made to obtain marquees which are less light-excluding than those now in

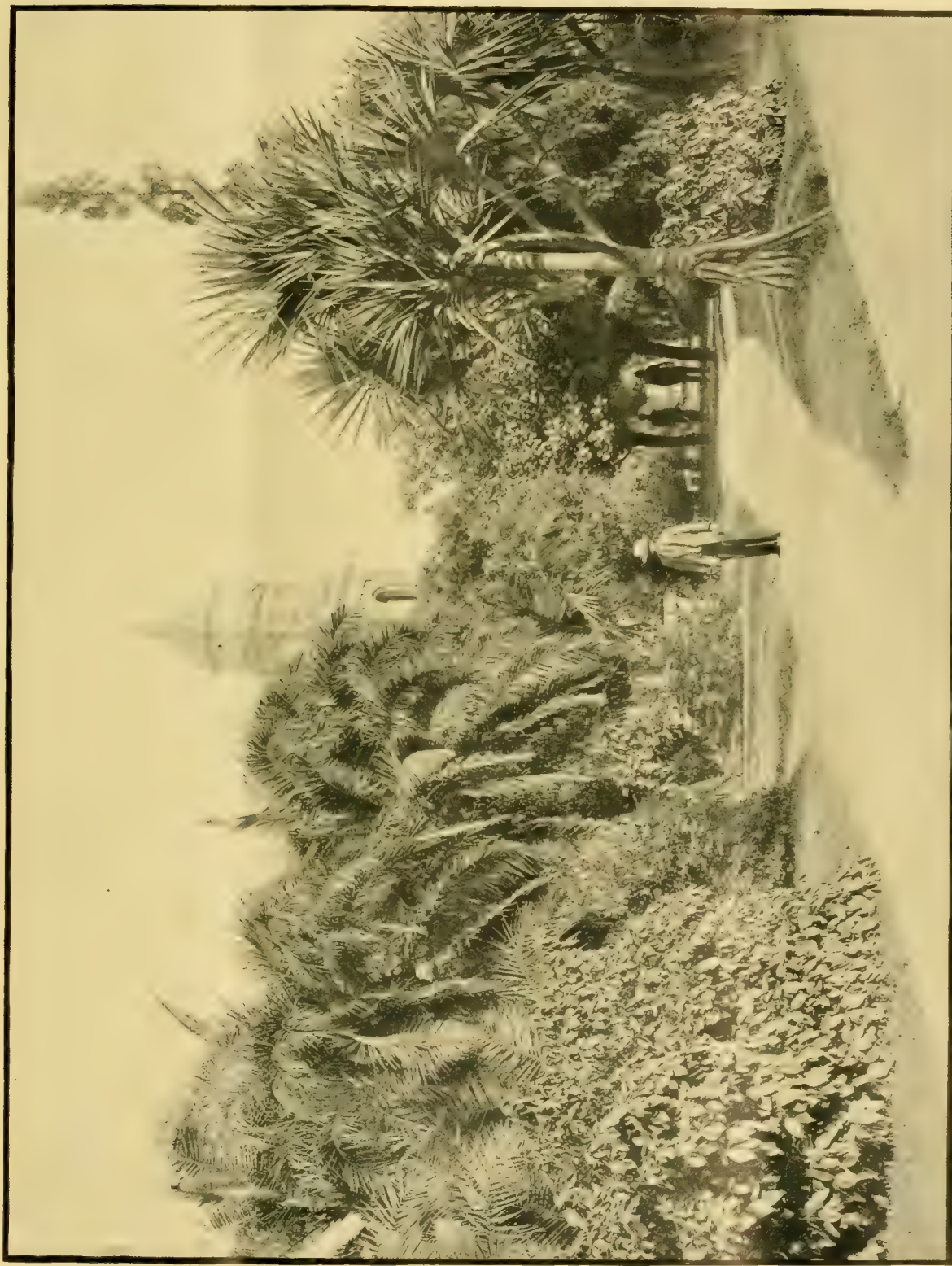
use, which often are very prejudicial to the effect of the exhibits. From cursory observations it would appear that the longer the material has been in use the more obstructive it becomes, but it is impracticable to have new tents for each occasion.

In the interests of the gardening charities the private grounds of Holland House were again thrown open to visitors on the first day of the exhibition, who paid a small sum for admittance, and we are exceedingly pleased to hear that a sum of £167 was thus raised. The beautiful gardens appeared thronged during the greater part of the afternoon, and every visitor must have been charmed by the showy Rose borders, in which the excellent variety Caroline Testout was as attractive as ever; the beds of *Epilobium* and other equally familiar plants, which at Holland House are made to contribute to the general attractions; the quaint Dutch garden, the water gardens, and other features, all of which have been referred to in these columns on previous occasions.

Since the introduction to Europe of the handsome species *M. Meconopsis racemosa*, integrifolia, which first flowered in this country in 1904 (see supplementary illustration to *Gardeners' Chronicle*, October 1, 1904), the genus *Meconopsis* has received greater attention from horticulturists. In our own pages we have figured, since that date, *M. punicea* (*Gardeners' Chronicle*, October 22, 1904, p. 289), *M. grandis* (*Gardeners' Chronicle*, June 17, 1905, p. 369), and *M. bella* (*Gardeners' Chronicle*, September 15, 1906, p. 197). In the present issue we are enabled to present a drawing by Mr. Worthington G. Smith, of *M. racemosa*, prepared from material exhibited by Lady Northcliffe at the meeting of the Royal Horticultural Society held on June 11 last. Concerning this species Lt.-Col. Prain, Director of the Royal Botanic Gardens, Kew, who is the acknowledged authority on this genus, has favoured us by contributing the following information:—

Meconopsis racemosa is a blue-flowered "Poppy" with prickly leaves, now fairly well known as a rock garden plant, where it may be grown under the conditions suitable for *M. aculeata*, which in general features it greatly resembles. It was first described by Maximowicz in 1876, from specimens obtained by General Przewalski in 1872 in Kansuh. To his brief diagnosis of the species Maximowicz added a note to the effect that *M. racemosa* may be distinguished from its nearest ally *M. aculeata*, Royle, by its entire leaves, and from *M. horridula*, Hook. f. and Thoms., the only other prickly *Meconopsis* known in 1876, by its racemose flowers; from both, he says, it may be distinguished by its five to eight petals. We now know of the existence of other species of *Meconopsis* with prickly leaves; all of them are easily distinguished from *M. racemosa*; none of them are yet known in European gardens.

So far as the distinction between *M. racemosa* and *M. aculeata*, which Maximowicz considered the nearest ally of *M. racemosa*, is concerned, there is another and very striking difference: the flowers of *M. aculeata* arise in the axils of floral leaves and the stem itself below the flowers is leafy;



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FIG. 12.—MECONOPSIS RACEMOSA: FLOWERS BLUE WITH PURPLE SHADE.

the flowers of *M. racemosa* have no bracts and the leaves are practically confined to a rosette at the base of the stem.

But when the case of *M. horridula* is considered we find, in the first place, that as originally described, *M. horridula*, though usually having simple, one-flowered scapes, has these "sometimes agglutinated at the base," which is another and, as it happens, more accurate way of stating what Maximowicz had before him. On the other hand, we find that the flowers of *M. horridula*, though originally described as having four petals, have in reality almost always five to eight petals. The characters on which Maximowicz has relied in separating *M. racemosa* from *M. horridula* do not therefore exist, and *M. racemosa*, where the flowers are all, or nearly all, racemously arranged on a leafless scape, is hardly more than a state of *M. horridula*, where the flowers are usually all, or nearly all, on simple one-flowered scapes. In an account of *Meconopsis* in *Annals of Botany*, Vol. xx., pp. 332-333, the question is dealt with as follows:—

"It is somewhat significant that this, which the writer takes to be only a condition, or at most a variety of *M. horridula*, should be well known, while true *M. horridula* is not known in cultivation. In the higher valleys of Sikkim, which the species, whereof both *M. horridula* and *M. racemosa* appear to be states, invades by crossing the inner passes, this is plentiful; it does not, however, appear to occur below 14,000 feet or to the south of the outer passes and of the line of snowy peaks like Kinchinjanga, Chumiamo, and Kinchinjao, that mark the main axis of the Himalaya in this region. Below 14,000 feet and to the south of these peaks the species is sparingly replaced by *M. sinuata*, apparently a distinct, though nearly related, species, which is represented at corresponding altitudes in the Western Himalaya by *M. aculeata*, and in Alpine Yunnan and Szechuen by *M. rudis*. To the north of these snowy peaks, and on the inner passes such as the Kongra-lama and the Tang-la, the form usually met with is *M. horridula*; at or above 16,000 feet this is practically the only form present. To the north of the inner passes below 16,000 feet both forms occur side by side, and there is every transition between *M. horridula* proper with all the scapes simple, discrete, and radical; *M. horridula* still, but with some or all of the scapes agglutinated at the base; and *M. racemosa*, with all the flowers disposed on a central several-flowered scape in a bractless raceme-like cyme. In specimens from the hills above Lhasa we sometimes find that the lowest and last-opening flower of this cyme is subtended by a leafy bract such as is associated with the lowest three-fourths to four-fifths of the flowers of *M. aculeata* and *M. sinuata*, and with the lowest half to two-thirds of the flowers of *M. rudis*. When we take into consideration the fact that the form distinguished by Maximowicz as *M. racemosa* occurs throughout central and eastern, as well as southern Tibet, and is the only form that overflows into the high Alpine valleys of Szechuen and Kansuh, while *M. horridula* is confined to southern Tibet and the high Alpine valleys of Sikkim and Phari, it is reasonable to surmise that *M. horridula* may be no more than a somewhat reduced condition of a Tibetan species whereof *M. racemosa* is the usual state."

OUR SUPPLEMENTARY ILLUSTRATION.—Seventy years ago, writes a correspondent, the elephant roamed at its leisure where the town of Durban now stands, but at the present time there is no settlement along the whole of the African coast, except Zanzibar, that possesses such a variety of tropical foliage and flowering plants as Durban. Beautiful vegetation is found not only in the Town Gardens (as shown in the illustration), but also in the streets, private gardens, and last, but not least, in the Durban Botanic Gardens. January is the month when most plants are in full flower. The Flamboyant (*Poincæa regia*) is one of the most gorgeous trees seen, its profusion of scarlet flowers are set in abundant light green, feathery foliage. It is very similar in appearance to the indigenous tree, *Albizia fastigiata*, with which a great many of the streets are planted. *Jacaranda mimosifolia* is a rather smaller tree than the Flamboyant, but it flowers equally profusely, the blossoms being blue instead of red. The tree is deciduous, and the flowers are produced principally when the leaves have fallen. The tree used more commonly than all others in street planting is *Hibiscus tiliaceus*, the Durban shade tree. It can be propagated very readily from quite large cuttings, and soon forms a bush-headed tree which produces numerous large yellow flowers. It is indigenous along the seashore in the tropics. A feature of Durban is the number of Screw Pines (*Pandanus utilis*) met with. They thrive almost everywhere on the coast, and are very ornamental subjects. Two fine specimens are growing at the entrance to the Botanic Gardens. Durban owes much of its beauty to the wild Date Palm (*Phoenix reclinata*), which, though of little economic value, produces a fine effect, especially when growing in dense clumps, the stem being from 5 to 15 feet high. This Palm likes to have its roots always near moisture, and its presence is one of the best indications of water in the subsoil. But in stately beauty as well as in utility its claims are small when compared with the lofty Date Palm (*Phoenix dactylifera*), many specimens of which, growing to a height of nearly 200 feet, exist around Durban. *Cocos nucifera*, the Cocoa-nut Palm, grows successfully in the Botanic Gardens, although it does best by the sandy seashores. Many other Palms are also to be found in the Botanic Gardens, but probably the finest is the Royal Palm (*Oreodoxa regia*), although *Cocos plumosa* may have rival claims to beauty. The great variety of plants used in the making of hedges impresses the visitor. Amongst the best and most ornamental are *Carissa grandiflora*, *Cestrum aurantiaca*, the dwarf *Bambusa Fortunei*, Tea (*Camellia Thea*) Privet, *Juniperus virginiana*, *Cupressus macrocarpa*, *Eugenia mimi*, &c. *Araucarias* thrive exceedingly well in Durban, and form a pleasing contrast to the Palms and other more gorgeous-leaved trees that surround them. The species that thrive best are *A. Bidwillii*, *A. brasiliensis*, *A. Cookii*, *A. Cunninghamii*, and *A. excelsa*. Any of these species are capable of producing valuable timber should they be planted on a large scale. Among ornamental landscape plants the *Acacias* occupy a prominent place. *A. mollissima* has dark green and feathery foliage, in contrast to *A. dealbata*, which is glaucous green, although of the same form. Both species produce an abundance of yellow blossoms, but the most showy of all the *Acacias* in this respect is *A. Baileyana*. *A. spectabilis* is also a free-flowering species; it has a vigorous, bush-like habit and silvery foliage.

THE BOTANICAL MAGAZINE.—The following plants are figured and described in the issue for July:—

ODONTOGLOSSUM LEEANUM, tab. 8,142. (See also *Gardeners' Chronicle*, 1882, vol. xvii., p. 525; 1883, vol. xix., p. 694; var. *Crawshayanum*,

1902, vol. xxi., p. 50).—Mr. ROLFE, in describing this Columbian plant, states that it is now recognised as being a natural hybrid between *O. gloriosum* and *O. triumphans*. It first appeared in this country in 1882 as a single plant in Messrs. JAS. VEITCH & SONS' nursery at Chelsea. A second plant appeared in 1902, also unexpectedly, in Messrs. T. ROCHFORD & Co.'s nursery at Broxbourne, and this is now in the collection of Mr. DE BARRI CRAWSHAY, Rosefield, Sevenoaks. The flowers are of a shade of bright yellow, and are much blotched with brown.

MONTANOA MOLLISSIMA, tab. 8,143.—This Mexican composite is described by Mr. Hutchinson. The species of *Montanoa*, when cultivated in English gardens, are generally employed as sub-tropical plants; they do not flower freely out-of-doors. The present species was introduced into cultivation by Ghiésbrecht, who sent seeds from Mexico to the Paris Botanic Garden in 1843. At Kew it is treated as a greenhouse shrub. It grows about 6 ft. high, and has sessile, lanceolate, or ovate lanceolate leaves, 4 to 7 inches long and 1½ to 4 inches broad. The ray flowers are white. The plant figured was raised from seeds received in 1902 from the late Sir Thomas Hanbury, La Mortola, Italy.

KENNEDYA RETRORSA, tab. 8,144.—This is a new Eastern Australian species described by Mr. W. Botting Hemsley. Plants were raised at Kew in 1905 from seeds received from the Sydney Botanic Garden, under the name of *K. procurrens*, Benth.; but *K. retrorsa* is distinct from that species, the type of which is in the Kew Herbarium. *K. retrorsa* is a twining shrub, having the young growths clothed with reddish hairs. The leaves are trifoliate, distinctly stalked, and are from 3 to 6 inches long. The flowers are coloured rosy-purple, with a white eye on the standard. They are clustered in racemes.

STEWARTIA MALACHODENDRON, tab. 8,145.—This is a North American species, which is better known under the specific name *S. virginica* (see *Gardeners' Chronicle*, 1877, vol. vii., pp. 433-435, fig. 86). Mr. Hemsley describes the species as a branching shrub, or small tree, 6 to 14 feet high, with slender, pubescent flowering branches. The leaves are deciduous, alternate, and very shortly stalked. The flowers are axillary, solitary, almost sessile, 3½ to 4 inches across. The petals are white, and the stamens purple, anthers blue. The drawing for the present figure was made from specimens communicated by Sir Joseph Hooker, in whose gardens at Sunningdale the species flowered freely last year. It is not in general cultivation in Britain. Mr. Bean recommends that the species should be planted in a sheltered position, for it is more likely to be injured by persistent exposure to north and east winds than by temporary spells of severe cold. A moisture-loving plant, it should be planted only where it is not likely to suffer from drought, and there should be, at least, one-third peat in the soil. The illustration reproduced at fig. 11, affords an excellent idea of the decorative character of the flowers.

PHYLLODOCE BREWERI, tab. 8,146.—A native of the Inner Sierras of California, this species was first observed by W. H. Brewer, who was attached to Prof. Whitney's surveying party from 1860-1864. The species varies in habit, and the better form now figured was discovered on Mt. Hoffmann, on the north side of the Yosemite Valley. It is an Ericaceous shrub, growing about 9 inches high, and, being perfectly hardy, is suitable for cultivation in the rock-garden. The flowers are pink, with a white centre. Dr. Otto Stapf describes them as being arranged in terminal short or long,

and sometimes very dense racemes. In an appended note Mr. W. Watson states that, in the matter of cultivation, there is no difference between the several species of *Phyllodoce* and *Bryanthus*.

THE NATIONAL SWEET PEA SOCIETY.—About 180 new members have joined the society this year, and there are now 22 societies in affiliation with it. We are informed that the exhibition to be held at the Royal Horticultural Hall, on Tuesday, July 16, promises to be a very successful one. The trials at the University College, Reading, are an important feature of the society's work, and these will be visited by the members on Friday, July 19. There are over 300 rows and 40 clumps of Sweet Peas in the trials. On Monday, July 22, the members of the society will pay a visit to Wisbech to inspect Messrs. R. H. BATH's Sweet Peas and other flowers. Full particulars can be obtained from Mr. C. H. CURTIS, Hon. Sec., Adelaide Road, Brentford.

—A correspondent writes to us stating that, "when the members of the committee of the National Sweet Pea Society journey to Reading on Friday next, the 19th inst., to examine the trials of Sweet Peas grown expressly for the society by Mr. CHARLES FOSTER, the garden superintendent of the University College, they will find that the trials are of exceptional excellence and interest. It is but needful to look over the gardens of this institution to be satisfied that a trial of Sweet Peas would be carried out with skill and the utmost care. Beautiful as were the hundreds of stocks a few days since, by Friday next the plants will be at their best, and lovers of Sweet Peas will find for themselves a great treat. The soil is so good, the culture so excellent, that all the plants are very robust."

SWEET PEA "PRINCESS VICTORIA."—We are informed that at the National Rose Show Messrs. DOBBIE & Co., Rothesay, had a beautiful light form of the Spencer type which was so much admired by H.M. the QUEEN and H.R.H. PRINCESS VICTORIA that the latter specially desired it to be named after her.

SOUTH-EASTERN AGRICULTURAL COLLEGE.—The Right Hon. AILWYN FELLOWES will present the diplomas and prizes on July 24 at the South-Eastern Agricultural College, Wye, Kent. The College was awarded the Silver Medal (highest award) at the Royal Agricultural Society's show at Lincoln, in a competition of exhibits of importance to British Forestry, for a collection of insects, &c., injurious to forest trees, which was made and set up by the Vice-Principal and Entomologist, Mr. F. V. THEOBALD.

THE LINCOLN SHOW.—Messrs. JNO. WATERER AND SONS, LTD., write to say that they were awarded a Gold Medal at the Lincoln Show for a group of shrubs.

AGRICULTURAL EDUCATION.—The Departmental Committee held meetings on the 2nd, 3rd, and 4th inst. The following witnesses attended and were examined:—Mr. CHRISTOPHER MIDDLETON, Darlington; Mr. ALBERT WHEATLEY, F.R.C.V.S., Reading; Mr. TRUSTRAM EVE, nominated by the Farmers' Club; Major CRAIGIE, C.B.; Mr. FITZHERBERT BROCKHOLES, nominated by the Lancashire Farmers' Association; Mr. A. E. HUMPHRIES, President of the National Association of British and Irish Millers; Rev. W. WILKS, M.A., Secretary to the Royal Horticultural Society; Dr. J. A. VOELCKER, Consulting Chemist to the Royal Agricultural Society of England; Mr. G. HOBGEN, M.A., Inspector-General of Schools, New Zealand; and representatives of the Dorset, Hereford, and Lancashire County Councils.

THE HORTICULTURAL CLUB.—The annual outing of the members and friends will take place on Thursday, July 25. The party will travel by rail from Paddington to Marlow, where a steam launch will be in waiting to convey the visitors to Henley. At Henley a visit will be made to Friar Park, the residence of FRANK CRISP, Esq., whose interesting gardens were described and illustrated in these pages on October 28, 1899. The visitors will be Mr. CRISP's guests at luncheon and afternoon tea. If the weather proves favourable the visit promises to be a most enjoyable one.

VIOLAS AT THE ROYAL BOTANICAL GARDENS.

—Visitors to the National Rose and the other exhibitions which have recently been held in the Royal Botanic Gardens have probably noticed the effective arrangement and the remarkable health of the Violas in the large bed in front of the conservatory. Roughly, the bed measures 150 feet long by 8 feet wide. The groundwork is composed entirely of Viola "White Beauty," except for a broad belting along the outside edge of the variety lilacina. It is remarkable that the latter, one of the oldest of Violas, should still be so much used in the London parks. Better flowers there undoubtedly are, but "lilacina" seems to have a constitution that braves all adverse conditions. Into the white groundwork of the large bed Mr. HAWES has made diamond-shaped patches, filled alternately with the varieties Molly Pope (bright yellow) and J. B. Riding (deep mauve). Small clumps of Veronica Andersonii variegata alternate with the diamonds, and behind them, at the extreme back, are clumps of Coreopsis grandiflora. It is always interesting to know the methods adopted by growers who succeed well with Violas in or near to London. Mr. J. F. McLEOD, who cultivates them extensively and so well at Dover House, Roehampton, does all his propagating under handlights out-of-doors on a partly-shaded western border. Mr. HAWES, at the Royal Botanic plants the cuttings, very often pulled from the old plants with rootlets already formed, into cold frames in September, and lifts the plants therefrom in the first week in April, with as large balls of soil attached as possible, and plants them out. This rather late planting can only be successful when special care, such as Mr. HAWES exercises, is taken to properly carry out the operation. As a rule the earlier Violas are planted the better.

THE ORIGIN OF THE POTATO.—The origin of the innumerable varieties of Potatoes in commerce, all known botanically as Solanum tuberosum, is so far from being clear that a few gentlemen were invited by Mr. ARTHUR SUTTON on Monday, the 8th inst., to inspect at the Reading Nurseries a large collection of plants embracing all the known species of Potato, with a view to their examination and, if possible, the determination of which specie or species could have given rise to the cultivated varieties. A large number of plants was displayed in one of the houses, and the peculiarities of each were described by Mr. SUTTON, and discussed by those present from the various points of view deduced from their varied experiences.

WOODBIDGE HORTICULTURAL SHOW.—In our last issue the date of this Suffolk show was, in error, stated to be July 13. The correct date is July 17.

COCOA-NUT FIBRE MATS.—In the *Review Horticole* lightly-woven cocoanut fibre mats are recommended as protection against frost and as shading materials, instead of the rapidly decaying coverings made from straw. They are said to last for about 10 years.

MIDLAND CARNATION AND PICOTEE SOCIETY.—Mr. T. HUMPHREYS, the honorary secretary of this society, writes as follows:—"Owing to the exceptionally late season, the Annual Exhibition of Carnations, arranged to take place on July 31 and August 1, has been postponed until Thursday and Friday, August 8 and 9."

THE NEW YORK BOTANICAL GARDEN.—We note in an American contemporary that efforts are being made by the board of managers of the New York Botanical Garden to obtain special funds to supplement the ordinary income of the institution. These funds may bear in general such personal designations as the contributors may wish to indicate. Twelve foundations which are greatly desired are specified as follows:—Exploration fund, for which 250,000 dollars is needed; horticultural fund, 100,000 dollars; library fund, 50,000 dollars; conservatory fund, 50,000 dollars; herbarium fund, 50,000 dollars; lecture fund, 25,000 dollars; fund for the illustration of *North American Flora*, 30,000 dollars; scholarship funds, several foundations of from 10,000 to 25,000 dollars; laboratory fund, 20,000 dollars; fund for horticultural prizes, 10,000 dollars; fund for botanical prizes, 10,000 dollars; and research funds, are all set forth in a statement signed by ADDISON BROWN, chairman of the executive committee of the board of managers.

Publications Received.—*The Women's Agricultural and Horticultural Union Leaflet.*—*The Country Gentlemen's Estate Book, 1907*, price 10s. 6d.—*The Early Bird. How to Get Up Early*, published by David Nutt, price 1s.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

MAGNOLIA CAMPBELLII.—As you mentioned on p. 3 the fine flowering of this magnificent variety in my shrubbery in 1902, I may inform you that this was the only time it has done any good for me. In 1903-4-5-6 it set no buds, and in this spring, when it bore over 60 buds, none of them opened, owing either to late frosts or cold winds, which either burned or tore the soft and delicate petals borne, as your woodcut so well and accurately shows, on the topmost extremities of the branchlets. The portrait of this fine Magnolia in the *Botanical Magazine* does not do it adequate justice. Readers who have access to a botanical library, such as those at Kew and the British Museum, should refer to the splendid portrait of M. Campbellii in Cathcart and Hooker's *Himalayan Plants*, where it is figured on plates 4 and 5. I fear, however, we shall never see the species in such excellence in our uncertain climate. W. E. Gambleton.

THE RAINFALL IN JUNE.—It is interesting to remark that the rainfall for June, namely, 1.45 in., was less than that for June last year, when the fall was 2.41 in. The weather has been dull, but there has not been an excessive quantity of rain. W. A. Cook, *Leamdown Gardens, Sussex*.

ARALIA MOSERI.—Will A. H. (see p. 20) kindly point out in what respect the variety of *Fatsia japonica* (Aralia Sieboldii) known as Moseri differs from the ordinary type? *Ignoramus*.

This is decidedly an improvement on the normal form. The leaves are larger and more regularly lobed, and the plant is shorter jointed. I at first thought that the system of culture had made the difference, but afterwards found that the two growing side by side were quite distinct, although no botanist would recognise the distinction. As a market plant the variety is a decided improvement on the type. It has come into commerce since I discontinued the cultivation of such plants, but if I were now in the trade I should certainly discard the original type and grow the variety Moseri, if seeds are procurable, even if the cost were much greater. A. H.

STRAWBERRIES LEADER OR KENTISH FAVOURITE.—In last week's issue I referred to Kentish Favourite Strawberry as having received an Award of Merit from the R.H.S. Fruit Committee, and stated that the committee wished

plants to be sent to Wisley Gardens for trial. On Friday, the 5th inst., a sub-committee visited Wisley (see p. 38), and amongst varieties of Strawberries that attracted attention for heavy cropping and general excellence, including earliness, was Laxton's Leader, a variety not yet widely known. The foliage of the variety was distinctive, and the crop was remarkable. A little farther on was Kentish Favourite, and this was in every respect so complete a duplicate of Leader that the committee unanimously agreed the two were identical. It is worthy of note that when Kentish Favourite was exhibited at the Temple Show, Mr. Laxton declared it to be Leader, and the trial at Wisley proves that he was right. Such being the case, and the variety Leader having already received an Award of Merit, it is obvious that the new award under the later name cannot stand. The growing of Strawberries at Wisley for trial has thus been thoroughly justified, and has enabled a mistake to be rectified in good time. A. D.

SUMMER PRUNING OF FRUIT TREES.—It is satisfactory to know that in the majority of cases summer pruning, as carried out by the skilled practitioner, is a success. Judging, however, from the dates given by the various correspondents, it is evident that a considerable amount of growth is permitted before the shoots are pruned. A great amount of the tree's energy is thus thrown away, and a decided check is given to the tree in the removal of so much foliage. In some cases, in order to make the trees symmetrical and tidy, the side shoots are pruned to two buds, with the consequent result that the dormant buds break into growth and the tree is quickly transformed into a thicket of shoots. Early stopping the new growths with the finger and thumb is a much better practice, and it can be carried out more expeditiously than pruning with the knife. In these gardens the trees are gone over early in the season, and when the shoots have made from six to eight leaves they are pinched back to within four or five leaves, according to the vigour of the individual tree. These shoots break into growth again usually from the two top buds, and these secondary shoots are pinched again to two leaves. Some varieties of Pears form fruit buds the same year. By this system of pinching the trees receive no check, and the result is that the side shoots are kept within bounds, whilst extra vigour is thrown into those retained for extension. Thorough and early maturation of these shortened growths is brought about by the sun and air, which can freely reach them the entire season through. I have no hesitation in stating that the qualifying term "good," given by many of the correspondents, would have been preceded by "very" if early pinching of the growths were periodically practised. W. H. Clarke, *Aston Rowant, Oxon*.

—Mr. Lewis Castle asks (p. 424) a few pertinent questions regarding the practice of summer pruning of fruit trees, and Mr. A. Dean gives a clear and definite answer to his questions in last week's issue (p. 14). As I have practised the system for nearly 40 years, not only on wall trees, but also on standard, bush and pyramid fruit trees, I may be allowed to supplement Mr. Dean's remarks on the subject. My experience proves that the check, which the pinching or pruning back of the young growths to 6 or 9 inches of their origin involves, causes not only the formation of fruit buds, but also the development of dormant intervening buds, and thereby a percentage of these also become fruit buds and bear fruit in the following year. Summer pruning not only aids in the formation and plumping of fruit buds, but the practice also promotes a balance of growth in the trees operated on. Moreover, summer pruning, by temporarily diverting the flow of sap, and at the same time admitting more light to the trees, conduces to the swelling and ripening of the present season's fruit. The stopping of the young shoots, when from 18 to 24 inches long, of Fig trees trained against walls will result in the production thereon of embryo fruits, which will develop and ripen in due time. Some of the strongest growths on young fruit trees which I stopped about the middle of last month have already developed miniature fruit buds, while an examination of the unstopped shoots reserved for supplying buds for budding purposes have wood buds only. H. W. Ward, *Lime House, Rayleigh*.

ROYAL HORTICULTURAL SOCIETY.

Summer Show at Holland House.

(See also article on p. 30.)

JULY 9, 10.—This society's summer exhibition took place on these dates in the grounds of Holland House, and the function must be again declared a success. The weather on the opening day was fair, and at intervals the sun shone brightly, but at other times the interior of the tents was dark. The general opinion was that this was the best summer exhibition held by the society, and certainly the exhibits were equal in quality to any that have been seen at Holland House. As the grounds of this beautiful residence are large, the crowding which unavoidably takes place at the Temple Flower Show is not found here, and visitors can inspect the exhibits with comfort. The arrangements for such an exhibition necessitate much extra work on the part of the secretaries and staff, for on this, as on former occasions, everything had been done to make the event an agreeable one. It is very satisfactory that we are able to note that a special tent had been erected and was set apart for the exhibition of novelties submitted to the committees for certificate.

Floral Committee.

ROSES.

Messrs. PAUL & SON, Old Nurseries, Chesham, showed a beautiful exhibit of Roses. At the back of the display were tall pillar varieties in pots, and standard plants with bamboo epergnes filled with choice blooms were interspersed freely amongst vases and baskets filled with flowers of such beautiful kinds as Mrs. W. J. Grant, Mrs. John Laing, Frau Karl Druschki, Ulrich Brunner, Laurette Messimy (charming in the bud), La France, Heinrich Schultheis, Marquise Litta, &c. We also noticed the single Gottfried Kellar, Rosa sericea pteracantha, Goldfinch (new), The Wallflower, handsome climbing Rose, Una, &c.

Messrs. W. PAUL & SON, Nurseries, Waltham Cross, Herts., showed very fine blooms of H.P. and H.T. Roses in new and old varieties. The varieties Mad. Jules Grolez, Leonie Lamesch, Antoine Rivoire, Königin Carola, Melanie Souper, D. R. Williamson, a fine, double, crimson flower, Dr. W. Gordon, and Pharisæer were very choice. Roses generally were lavishly displayed by this firm.

Messrs. WM. CUTBUSH & SON, Highgate, London, N., filled one corner of the large tent with Roses and Carnations, with a few Codiaëums (Crotons), Dracænas, &c., as foils. This was a most pleasing group, effectively staged. There were banks of Carnations in a setting of the dwarf Polyantha Rose Mrs. W. H. Cutbush, with other taller Roses at intervals, principally climbing varieties, and a pleasing change was afforded in a bank of the yellow Calla Elliottiana, and another of Verbenas. The Carnations were especially fine. We have space only to mention a few of the choicest, such as Mercia, Maggie Hodgson, the darkest of the Souvenir de la Malmaison type; Baldwin (rose), King Arthur, a bright, scarlet-coloured border variety, Lady Hermione, and Yellow Gal. The new Rambler Rose Paradise was shown well in this group.

Messrs. H. MERRYWEATHER & SONS, The Nurseries, Southwell, Notts., exhibited excellent Roses of most sections; two boxes of H.P.s and H.T.s, 36 in all, consisted of very fine blooms. This firm showed a Polyantha Rose named Phyllis, a semi-double flower of deep pink colour, flowering in large clusters.

Messrs. W. and J. BROWN, florists, Stamford, showed popular varieties of the Rose in close bouquets, with many good flowers among them. This exhibitor also had Trachelium cœruleum, Verbena Miss Willmott, blooms of many varieties of the "Cactus" Pelargonium, which are so much admired as cut blooms, plants of Lilium Szovitsianum, Heliotrope, &c.

Mr. CHAS. TURNER, the Royal Nurseries, Slough, made a very fine display with Roses in great variety, many perfect blooms being noted among them. He also showed many of the garden Roses so useful for making bouquets,

sprays, filling vases, or for training on walls and fences, pillars, &c.

Beautiful blooms of cut Roses were shown by Messrs. ALEX. DICKSON & SON, Belfast. Several novelties of the highest excellence were included (see Awards) in this choice exhibit, which included flowers of the varieties Richmond, Peggy Molyneux, Mrs. P. Blair, Lady Helen Vincent, Mrs. Harold Brocklebank (creamy-white), Dorothy Page Roberts (deep salmon, with recurving petals), &c.

Mr. R. CHAPLIN, Joyning's Nursery, Waltham Cross, had excellent examples of many Rambler kinds, also blooms of Caroline Testout, Mrs. W. Grant, Frau Karl Druschki, and others.

Roses and Sweet Peas were freely shown by E. E. GRIMSON, Esq., Sutton, Surrey.

Messrs. FRANK CANT & CO., Braiswick Rose Gardens, Colchester, had many fine cut Roses. Mrs. Harvey Thomas, Papa Gontier, Mrs. W. Grant, Lady Roberts, and the fine white Frau Karl Druschki being prominent varieties.

Messrs. B. R. CANT & CO., the Old Rose Gardens, Colchester, also set up a most admirable lot of Roses, among which Irish Elegance, Madame Ravary, Richmond, Dean Hole, Capt. Hayward, Mrs. Laing, Mrs. E. G. Hill, and others were seen.

HOBBIES, LTD., Dereham, Norfolk, made a very large exhibit of Roses principally of Rambler varieties. Many were shown as standards on tall, straight stems. The varieties Dorothy Perkins, Hiawatha, and Minnehaha were noteworthy among the climbers; there were also seen good blooms of La France, Liberty, Caroline Testout, Dean Hole, L'Innocence, Frau Karl Druschki, Papa Gontier, Bessie Brown, and Richmond.

Messrs. S. BIDE & SONS, Farnham, showed Rose Queen of Spain and a new seedling Tea variety named Mrs. Sophie Neate, a seedling from Mad. Lambard × Anna Olivier.

SOME CUT FLOWERS.

Sweet Peas were extensively displayed. Messrs. DOBBIE & CO., Rothesay, had a grand assortment of these popular flowers, all of the highest merit. Marble Queen, Jessie Cutbertson, King Edward VII., Dora Breadmore, Mrs. Collier, and Mrs. Hardcastle Sykes were some of the finer varieties in this very large display.

Messrs. WM. ARTINDALE & SON, Sheffield, had a comprehensive exhibit of tufted Pansies (Violas), some 100 or more examples being staged in the best condition.

Mr. H. B. MAY, Edmonton, showed cut Pelargoniums of good quality.

Tree Carnations from Messrs. HUGH LOW & CO. were extremely fine. This firm also displayed varieties of the Souvenir de la Malmaison section, as well as a representative collection of the American tree sorts.

A collection of Sweet Peas from Messrs. H. CANNELL & SONS, Swanley, was in every respect an excellent one. Among the best were those following: Miss Doris (rosy-carmine), Rosy Morn (fine colour), Cannell's White, Mrs. Robt. Cannell (rosy-salmon), Henry Eckford, &c. The blossoms and sprays were of superb quality.

Mr. W. H. PAGE, Langley Park Nurseries, Hampton, staged an admirable lot of blooms of Tree Carnations in the leading kinds. Enchantress was very fine, as were also White Lawson and President Roosevelt.

Carnations were also finely presented by Mr. A. F. DUTTON, Iver, Bucks. Christmas Eve is a very rich and good scarlet variety.

Mr. JARMAN, Chard, in addition to showing beautiful Roses, made a feature of some improved forms of the Sweet Sultans (Centaurea suaveolens vars.), which were greatly admired.

Messrs. G. STARK & SONS, Great Ryburgh, Suffolk, and Messrs. E. W. KING & CO., Coggeshall, Essex, each displayed Sweet Peas in many good kinds.

Sweet Peas were also well shown by Mr. W. BREADMORE, Winchester. Some 250 square feet of tabling was occupied by the choicest and best of these popular flowers.

Another handsome display of Sweet Peas came from Mr. HENRY ECKFORD, Wem, Salop, and here, too, many of the finest varieties were noted.

GROUPS OF PLANTS.

Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, staged handsome foliage plants of exotic species. Many flowering plants were interspersed in the exhibit; the centre was occupied by a group of Orchids, and there were also Cannas, Carnations, greenhouse Rhododendrons, Angelonia grandiflora, &c. Tall stands accommodated well-grown plants of Nepenthes, including a choice example of N. sanguinea, with well-developed pitchers. The foliage plants comprised Alocasias, Anthuriums, Marantas, Aralias, Dracænas, Codiaëums (Crotons), Ferns, &c. Notable plants were Alocasia macrorrhiza variegata, Codiaëum (Croton) Reidii, and Medinilla magnifica. Messrs. VEITCH also exhibited a collection of Carnations, and another of Roses.

Messrs. WM. BULL & SONS, King's Road, Chelsea, displayed ornamental-leaved stove and greenhouse plants. Dracæna Victoria was shown well in this group, also Alocasia Lowii grandis, Eugenia myriophylla, Asparagus Sprengeri variegata, Dracæna Prince Manouk Bey (with broad, dark-red leaves), Pandanus Veitchii, Aralia triloba, &c.

Mr. L. R. RUSSELL, Richmond, showed handsome foliage plants of stove and greenhouse species. In the centre of the exhibit was a large specimen of Dracæna Victoria, with healthy foliage to the ground level; another notable plant was Alocasia crystallina, with remarkably well-developed foliage. There were also seen well-grown specimens of Anthurium Veitchii, Aralia elegantissima, A. Veitchii, Dracæna Goldiana, Alpinia Sanderiana, Alocasia metallica, and many others of equal beauty.

Messrs. J. PEED & SON, West Norwood, showed Caladiums, not excessively large in size, but brightly coloured and very fresh in appearance. The varieties were numerous and represented the finer of these showy foliage plants. Rio de Janeiro (red with green markings), Princess Olga (dark red), Lady Dorrington (a pale green margin enclosing a red groundwork with darker spots), Silver Queen (a pale coloured variety), Gerard Dow, Pintado, Mme. J. R. Box, and John Peed are a selection. Messrs. PEED also exhibited a large number of Gloxinias, and a group of Carnations, principally of the Souvenir de la Malmaison type.

Messrs. JOHN LAING & SONS, Forest Hill, London, also displayed Caladiums. The group was accommodated in the corner of the largest tent, and was arranged so that the plants at the back were elevated and gradually sloped towards the foreground. Here again the colours were well developed, especially in the varieties Alexander III., King Haakon, and Louis Van Houtte.

Mr. W. ICETON, Putney, exhibited greenhouse flowering plants, Lilium lancifolium, auratum, and longiflorum, Hydrangea Hortensia (with blue flowers); H. H. Mariesii, with flat corymbs of flowers, having a row of pink outer flowers larger than those on the disc; and H. paniculata were all well displayed in a setting of small Palms, Grasses, Ferns, &c. The effect of the group was further enhanced by Lily of the Valley arranged on tall columns.

Messrs. R. & G. CUTBERT, Southgate, London, N., showed handsome flowering plants, including Hydrangea Hortensia, H. paniculata, Lily of the Valley, Statice Suworowi, Verbena Miss Willmott, Lilium auratum and other species, Roses, including standard plants handsomely flowered of Lady Gay, Dorothy Perkins, &c., the whole being enhanced with ornamental leaved Maples, Ferns, Caladiums, &c., and forming collectively an exhibit of great beauty.

J. GURNEY FOWLER, Esq., South Woodford (gr. Mr. Davis), displayed a collection of Selaginellas in more than 50 varieties. All types were represented from those with broad foliaceous growths to those with a moss-like habit.

Messrs. H. B. MAY & SONS, The Nurseries, Edmonton, exhibited choice Ferns; the display occupied an area of 600 square feet, a space sufficient to allow the plants to be displayed without crowding. The collection was especially rich in Platyceriums, Acrostichums, Davallias, and Adiantums. Some of the best shown were *Davallia solida superba* (a magnificent specimen), *Adiantum undulatum*, with kidney-shaped pinnæ; *Adiantum Veitchii*, a coloured Fern; *Acrostichum aureum*, *Lygodium japonicum*, *L. scandens*, *Nephrolepis exaltata todeoides*, *N. e. superba*, *N. Mayii*, *N. elegantissima* (this plant was nearly 5 feet across), and *Davallia Veitchii*. Messrs. MAY also displayed 130 varieties and species of hardy Ferns, amongst which was a very representative collection of Polystichums. In another tent Messrs. MAY exhibited Zonal Pelargoniums and other flowering plants.

HARDY PLANTS.

A special importance was attached to these plants this year, inasmuch as the Council set apart the "Sherwood Cup" in open competition to exhibitors of hardy plants and flowers, and it was a matter of some little surprise that a London amateur should secure the cup with a most excellent group. The cup was offered for the best collection of herbaceous and bulbous plants grown in pots or tubs, but a background of foliage plants was allowed. The conditions required the exhibit to be shown on a space not exceeding 400 square feet. J. BRADSHAW, Esq., The Grange, Southgate (gr. Mr. G. G. Whitelegge), was the successful exhibitor, with plants well cultivated and splendidly staged. Bold groups of *Liliums pardalinum*, *longiflorum*, *tigrinum*, *Hansonii*, and others constituted a notable feature. There were also Delphiniums in excellent condition, considering they were in pots; white and blue peach-leaved *Campanulas*, *Spiræas*, early *Gladioli*, *Iris lævigata*, *Pentstemon barbatus Torreyi*, *Heucheras*, &c. The method of staging constituted a delightful change from the conventional bank arrangement, and the groups, whether viewed from the full front or from the sides, was in every respect good.

Messrs. WM. CUTBUSH & SONS, Highgate, had also an admirable group, in which a far greater number of varieties were seen. A water garden in one corner, with *Iris lævigata* encircling the pool, was a very charming feature. Many very fine groups of *Liliums* were seen in this group, which was composed of beautiful and rare plants.

Messrs. WM. ARTINDALE & SON, Nether Green, Sheffield, was the other competitor.

Apart from these competitive groups, there were many other fine exhibits of hardy plants. Especially good was a group from Messrs. R. WALLACE & CO., Colchester, who had rich banks of *Lilium auratum*, *colchicum*, *Henryi*, *Martagon album*, *Washingtonianum purpureum*, and others; *Eremuri*, *Larkspurs*, early *Gladioli* of very fine quality, *Ixias*, Japanese *Irises*, and many other things, all in first-class condition.

Mr. J. H. BURROUGH, Ketton Cottage, Stamford, showed some half-dozen vases filled with the handsome yellow spikes of *Lilium colchicum*.

Mr. M. PRICHARD, Christchurch, Hants, had a very choice and extensive collection, including *Iris aurea*, *I. Kämpferi*, *Gaillardias*, *Astilbes*, *Kniphofias*, *Iris Monnieri*, *I. aurea* (both in grand form), *Delphinium King of Delphiniums*, many choice *Liliums*, water plants, &c.

Messrs. BARR & SONS, Covent Garden, made a big display with *Ixias*, *Poppies*, early *Gladioli*, *Pæonies*, *Liliums*, *Heucheras*, English and other *Irises*, and other seasonable plants.

Mr. AMOS PERRY, Winchmore Hill, set up a most delightful water garden, which attracted much notice and which quite surpassed all his previous efforts in this direction. The arrangement was natural, and demonstrated that much is possibly in water gardening even within limited areas. The exhibit was one of the prominent features of the show. Mr. PERRY also showed a selection of choice hardy herbaceous plants.

Messrs. G. & A. CLARK, LTD., Dover, contributed a very fine group of hardy perennial

and Alpine plants, Sweet Peas, and other flowers. Delphiniums were finely displayed in this extensive exhibit.

Messrs. R. H. BATH, LTD., Wisbech, staged representative gatherings of *Roses*, *Sweet Peas*, *Delphiniums*, and *Carnations*, all of much excellence.

A very fine group of hardy flowers was shown by Messrs. GEO. JACKMAN & SON, Woking. *Pæonies* were particularly good in this exhibit; also *Larkspurs*, *Liliums*, *Iris aurea*, *I. Kämpferi*, and many others. A large display of cut *Roses* occupied one end of this group.

Messrs. T. S. WARE, LTD., Feltham, filled a considerable area with showy, flowering hardy plants, such as *Iris gigantea*, *Pæonies*, *Scabiosa caucasica*, *Romneya Coulteri*, *Dendromecon rigidum*, &c.

The Misses HOPKINS, Barming, near Maidstone, had a pretty group of Alpine and herbaceous plants, nicely arranged. Some excellent *Dianthus*, *Campanula Moerheimii*, and *Lychnis Haageana* were among the more conspicuous subjects.

Mr. HOWARD H. CRANE, Highgate, N., showed a charming collection of Tufted Pansies (*Violas*) in conjunction with their miniature congeners the *Violettas*. The latter plants are really Alpine in character, and they carpet the soil with their dense, bright-green tufts of leaves, above which rise the dainty blossoms. The colours embrace rosy-mauve, blue, yellow and gold, white and yellow—some were perfect bicolors. In all forty named varieties of the two flowers were exhibited.

Mr. G. REUTHE, Keston, Kent, had a most interesting and varied group, and one in which the specialist in Alpines and rare shrubs found much that was interesting.

Messrs. PAUL & SON, Old Nurseries, Chess-hunt, showed a splendid lot of *Pæonies*, *Iris gigantea*, *Heucheras*, and flowering sprays of *Lonicera Hildebrandtii*.

Messrs. WILLIAM BULL & SON, Chelsea, had collections of early *Gladioli* and English *Irises*.

THE GUILDFORD HARDY PLANT CO., Guildford, displayed a very interesting group of plants—*Echeverias*, *Irises*, especially *I. aurea*, *I. ochroleuca*, *I. longipetala*, &c.

Messrs. GEO. BUNYARD & CO., Maidstone, had a most extensive array of hardy flowers, including English *Irises*, *Romneya*, many choice *Liliums*, lovely gatherings of *Iris Monnieri* and *I. x Monspur*, *Potentillas*, *Larkspurs*, &c.

Messrs. BLACKMORE & LANGDON, Bath, had an excellent exhibit of *Delphiniums*.

MISCELLANEOUS.

Messrs. H. CANNELL & SONS, Swanley, Kent, showed 180 plants of *Cannas*. The method of arrangement was in rows, rising in tiers, which enabled the plants to be displayed to advantage. Several new varieties were included in the group, the most notable being those following: Dr. Balz (a crimson-scarlet variety, splashed with yellow), *Junata* (yellow self), Wm. Saunder (a variety of dwarf habit, with rosy-scarlet-coloured flowers, and bronze-shaded foliage), Dr. Budingem (one of the finest of all *Cannas*, with spikes of very large scarlet or crimson flowers), Frau Philipp Siesmayer (an improved form of Monte Rosa), Wm. Watson (salmon-buff), and Elfe (a shade of fawn, a new colour in these flowers).

Messrs. THOS. S. WARE, LTD., Feltham, made one of the largest displays of tuberous *Begonias*, containing many varieties under names. A pretty flower of canary-yellow colour was named Countess of Ilchester, another of an orange tint was Lady Treloar; Queen Alexandra is pink, edged with scarlet; Picotee is rather like the last-named, but is a neater flower.

Mr. A. LL. GWILLIM, Cambria Nursery, New Eltham, Kent, showed tuberous *Begonias* in both double and single-flowered varieties, with petals of clear and distinct colours. Margaret Gwillim is a beautiful double flower of a canary-yellow tint; Mrs. H. Harris is of a fine salmon-pink, with voluted petals, waved at the margin.

A large display of tuberous-rooting *Begonias* was made by Messrs. BLACKMORE & LANGDON, Tiverton, Bath, and the quality of the blooms was even better than in the foregoing. Like the other group, this one consisted of double flowers. Some varieties of a pendulous habit were shown as growing in wire baskets. *Fleur de Chrysantheme* was of these basket plants the more graceful and pleasing.

Mr. VINCENT SLADE, Staplegrove Nurseries, Taunton, showed a grand collection of Zonal *Pelargoniums*, some of the best we have ever observed, in 72 distinct varieties, and three of Ivy-leaved varieties, viz., *Her Majesty the Queen* (orange scarlet), *His Majesty the King* (bright scarlet), and *Ryecroft Surprise* (cerise).

Messrs. J. LAING & SONS, Forest Hill, showed *Begonias*, fine in regard to colour and form, of which were Earl Ducie, Lady Grenfell, and Lady Lichfield were the best.

Mr. C. TURNER, the Royal Nurseries, Slough, showed Pinks in self and laced varieties in large numbers.

Mr. W. H. PAGE, Tangley Nurseries, Hampton, made a large display of American *Carnations*, and these, being set in a bed of *Adiantum Fern*, had a beautiful effect.

A well-flowered batch of show *Pelargoniums* was arranged by J. A. YOUNG, Esq., Putney (gr. Mr. S. H. Street), and the same gentleman exhibited a group of *Carnations* of popular varieties.

Messrs. H. LOW & CO., Bush Hill Nurseries, Bush Hill Park, London, N., showed a number of fine plants of *Callistemon floribunda*; *Rose Baby Dorothy*, a variety very dwarf and free in flowering, the colour is pink; *Cassia corymbosa*, and a large number of *Carnations* of *Souvenir de la Malmaison* and American varieties.

Sir G. FAUDEL-PHILLIPS, Balls Park, Hertford (gr. Mr. Fitch), made a nice display with *Souvenir de la Malmaison Carnations* in cream, scarlet, crimson, and rose-pink tints.

Mr. T. A. HUMBERTON, Epping, Essex, showed a pink-flowered Zonal *Pelargonium*, raised from the white *Hermione*.

Messrs. THOS. ROCHFORD & SONS, Broxbourne, displayed a very large number of plants of the beautiful *Nephrolepis exaltata todeoides*.

Mr. R. RASMUSSEN, Eastville Nurseries, Waltham Cross, had a showy exhibit, consisting of single-flowered *Petunias*.

Mr. T. JANNOCH, the Lily Nursery, Dersingham, had a large exhibit of *Lily-of-the-Valley*, consisting of the "Fortin" variety, much the better one, and some of the Berlin variety, with smaller "bells." (Silver Banksian Medal.)

R. I. MEASURES, Esq., Camberwell, showed a large number of *Sarracenas*, *Droseras*, and *Nepenthes*, including several rare species.

AWARDS.

FIRST-CLASS CERTIFICATE.

Crinum Mearsii.—This is a miniature species. It was shown in a 60 pot, and was carrying two inflorescences, one of which had seven expanded flowers, the other six in the bud state. The plant was not more than 3 or 4 inches in height, and the spread of the foliage measured about 18 inches. The leaves are of the usual *Crinum* type, with somewhat wavy margins. The flower spikes are produced below the rosette of leaves, and they spring from the axils of the older scale leaves. The flower stalk terminates in an umbel, and each flower has a long calyx-tube that bears at its extremity a white perianth of linear segments, each about 4 lines in width. The stamens are dorsifixed; the anther filament is coloured red for about two-thirds of its upper portion, the lower portion being white. Shown by Col. BEDDOME, Putney.

AWARDS OF MERIT.

Crinum x H. J. Elwes.—This is a hybrid from *C. Moorei* x *C. americanum*. The inflorescence only was shown, and this had seven expanded flowers and a number of undeveloped flower-buds, the petals being of a bright shade of pink, similar to that of *Amaryllis Belladonna*, with paler, almost white, bases. Shown by the raiser, H. J. ELWES, Esq., Colesborne.

Delphinium Alake.—A variety remarkable for the size of its spike and individual flowers, some of which measured nearly 3 inches across. The outer row of petals are of a rich cobalt blue colour, the centre ones being violet-purple. The whole inflorescence formed a column of flowers 2 feet in length. Shown by Messrs. G. & A. CLARK, Dover.

Delphinium Rev. E. Lascelles.—A double-flowered variety of rich blue colour, with a white centre. The habit is very robust. Shown by Messrs. A. A. WALTERS & SON, Bath.

Hedera dentata variegata.—A variegated Ivy, with broad patches of silver in the older leaves, and glades of yellow in the younger. A

form of the well-known *H. dentata*. Shown by Mr. L. R. RUSSELL, Richmond.

Rose Joseph Lowe.—A hybrid Tea variety of rosy-pink colour, said to be a sport from the variety Mrs. W. J. Grant. The blooms possess handsome form, with somewhat conical centres. The inner surfaces of the petals are very pale, but the outer are a beautiful shade of pink. Shown by Messrs. LOWE & SHAWYER, Uxbridge.

Rose Goldfinch.—A rambler variety, with terminal corymbs of semi-double flowers that are of a coppery-yellow shade in the younger blooms, but which passes to a rich creamy white in the older flowers. Long growths were shown with their bases in water by Messrs. PAUL & SON, Old Nurseries, Cheshunt.

Sweet Pea Elsie Herbert.—A Picotee flower of the Countess Spencer type. The margins of the petals are tinged with rose, which fades in the centre of the flower to almost pure white. The blooms are very large. Shown by Mr. C. W. BREADMORE, Winchester.

Sweet Pea Princess Victoria.—Another flower of the Countess Spencer type, the petals being suffused with pink on a white ground, and showing an orange sheen. The flowers are very large, and are borne on long, stout stalks. Shown by Messrs. DOBBIE & Co., Rothesay and Mark's Tey.

Sweet Pea St. George.—A variety of orange colour, which fades in the older blooms to rose. The standards are waved. Shown by Messrs. HURST & SON, Houndsditch.



FIG. 13.—NEW HYBRID TEA ROSE LADY HELEN VINCENT, AWARDED THE GOLD MEDAL OF THE NATIONAL ROSE SOCIETY, AND AWARD OF MERIT OF THE ROYAL HORTICULTURAL SOCIETY; COLOUR A SHADE OF PINK.

Rose Lady Helen Vincent (see fig. 13).—The colour of this new Hybrid Tea Rose is a suffusion of delicate pink. The central petals form a pointed cone, but the outer ones droop and expand, giving the flower a very characteristic appearance.

Rose Souvenir of Stella Gray.—A Tea variety, with charming buds of a soft yellow shade; when open the petals assume a ruddy bronze tint. The blooms are of small size.

Rose Mrs. Munt.—A creamy-white hybrid Tea variety of first-class form. The petals expand well from the centre, and their edges are rolled backwards. The blooms are large.

Rose Mrs. Harold Brocklebank.—This is another hybrid Tea variety, with creamy-white petals, but of rather different build to the foregoing. It somewhat resembles the variety Duchess of Portland. These four Roses were shown by Messrs. ALEX. DICKSON & SONS, Newtownards.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, De B. Crawshay, H. J. Chapman, H. A. Tracy, F. Sander, H. G. Alexander, H. Little, T. W. Bond, W. H. White, W. A. Bilney, W. Boxall, W. Cobb, Jeremiah Colman, A. Dye, W. H. Young, H. T. Pitt, Norman C. Cookson, J. Charlesworth, F. M. Ogilvie, W. Bolton, H. Ballantine, and A. A. McBean.

At the entrance of the large tent, on the side devoted to Orchids, Messrs. SANDER & SONS, St. Albans, had an extensive and effective group rich in fine *Lælio-Cattleyas*, which were disposed in sections, the forms of L.-C. Martinetii and L.-C. Canhamiana being especially good. Two sets of varieties of *Miltonia vexillaria*, some with very large and finely-coloured flowers, were on each side of the centre of the group, and at

the back slender-sprayed *Oncidiums* and other species were arranged. Among the *Odontoglossums*, the fine new *O. Emperor of India*, a noble hybrid of unrecorded parentage, was the most striking; its very large and finely-formed flowers only slightly showed the white ground colour between the heavy blotching of rich claret-purple. It is a very remarkable break, and quite distinct from any variety previously shown. Of the *Cattleyas*, *C. Mossiæ Reineckiana excelsa* represented probably the finest known white-petalled *C. Mossiæ*, it being of the finest size and shape and devoid of the tendency to narrowness so common in white forms of *C. Mossiæ*. *C. M. Wagneri* was also a pure white flower of fine shape. Of hybrid *Cattleyas*, *C. Whitei*, Ronsele variety, raised by the Marquis de Wavrin, was remarkable for the almost uniform glowing rose-purple tint of its flowers, the only other colour present being the yellow disc to the lip and the white bases to the mid-ribs of the petals. Other pretty hybrids were *Cattleya Roehrsiana*, *Phaius Owenianus* (a very rich, reddish-crimson flower), *Cypripedium Lady Maple* (*Youngianum* × *Gowerianum*), *C. Ultor*, and many others. Among the species noted were the large and singular *Maxillaria Sanderiana*, a fine *Cœlogyne pandurata* (its large emerald-green and black flowers contrasting curiously with those of the pretty dwarf *C. Schilleriana*), *Cycnches chlorochilon* (the Swan Orchid), three plants of the rare *Ansellia nilotica*, *Galeandra Baueriana*, *Renanthera Imschootiana*, *Oncidium phymatophilum* (with branched spikes of insect-like flowers), and many other rare and interesting species.

JEREMIAH COLMAN, Esq., Gatton Park, Reigate (gr. Mr. W. P. Bound), came next with a very fine group, at the back of which the bright, orange-scarlet sprays of *Epidendrum Boundii* mingled with the large, golden-coloured blooms of *Oncidium varicosum*, *O. macranthum*, and other elegant species. In the centre was the pretty Gatton Park form of *Lælio-Cattleya Canhamiana alba*, all with white sepals and petals and bright, crimson-purple lips. Beneath them was a selection of *Cypripedium niveum* and other dwarf kinds; on the sides were batches of the orange and crimson-coloured *Lælio-Cattleya Phœbe* and the rose and purple L.-C. *Martinetti*. At each end was a very fine selection of British Orchids, including *Aceras anthropophora*, *Ophrys apifera*, *O. muscifera*, and other of the insect-like species. In one part of the group plants of *Cypripedium callosum* *Sanderæ* and *C. Lawrenceanum Hyeanaum* were grouped together; in another the Gatton Park *Spathoglottis*, with their bright-yellow and crimson-tinted flowers, were effective. Well-grown plants of *Cochlidia Noezliana* afforded bright, orange-scarlet colour, and there were many brilliant varieties of *Masdevallia coccinea*. Of uncommon species noted were *Vanda Parishii*, *Phalænopsis Esmeralda*, *Pleurothallis macroblepharis*, *Oncidium Papilio*, *Masdevallia muscosa*, a very finely-grown plant of *Dendrobium McCarthia*, *Ancistrochilus Thomsonianus*, the pretty *Epidendrum prismatocarpum*, *E. alatum*, *E. umbellatum*, and other *Epidendrums*; a good selection of *Miltonia vexillaria*, including a good white form. Of the newer hybrids, *Lælio-Cattleya Geoffrey* was a pretty flower, and the new *Brasso-Cattleya Mary* secured an Award of Merit. (See Awards.)

Messrs. CHARLESWORTH & Co., Heaton, Bradford, staged a very fine group, the plants in which were of great merit and excellently well arranged. At the back were sprays of the fine white *Phalænopsis amabilis Rimestadtiana*, finely-flowered *Oncidium macranthum*, and other *Oncidiums*. In the body of the group were good representatives of most of the showy *Lælio-Cattleyas*, among which was the superb L.-C. *Canhamiana*, Rosslyn variety, for which a First-Class Certificate was given on May 31, 1904, and which has never been surpassed, its large, finely-formed, richly-coloured flower being unique in its section. Among forms of *Cattleya Mossiæ*, *C. M. Reineckiana King Edward VII.* was a grand white-petalled flower, *C. M. Wagneri*, a charming flower of pure white, and *C. M. Arnoldiana* a large white variety with a slight pink tinge on the petals and a purple-veined lip. *C. Warneri alba* appeared as one of the purest white and rarest *Cattleyas*, and *C. Mendelii mosaica* was a very remarkable pink and white bizarre-like flower, all the segments being variegated. Of hybrid *Odontoglossums*,

there were several new hybrids, including one derived from *O. Hallii* and *O. hastilabium*, a very distinct and pretty variety, also several *O. Phoebe*. Among the species were *Cœlogyne pandurata*, *Eriopsis rutidobulbon*, *Acanthophippium javanicum*, *Pescatorea cerina*, *Lycaste Deppei*, *L. aromatica*, the white *Habenaria Susannæ*, with a spike of five of its singular flowers; and a great variety of other interesting plants, including both hybrids and species.

In another tent Messrs. HUGH LOW & CO., Bush Hill Park, Enfield, staged a good group, composed principally of *Cattleya Mossiæ* and *C. Mendelii*, one fine specimen of the latter having over 30 flowers, and another having very clear white blooms. At the back were the light spikes of *Oncidium Carthaginense*, *O. leucochilum*, *Odontoglossum hastilabium*, &c. At one end was a selection of singular species, including *Bulbophyllum Dearei*, *B. siamense*, and a form of *B. Lobbii*; also *Platyclinis filiformis*, the rare *Dendrobium Griffithianum*, and *Epidendrum nemorale*. At the other end was a batch of the orange-coloured *Epidendrum vitellinum*, and others remarked were *Cypripedium Schofieldianum*, *C. Gowerianum magnificum*, *C. macrochilum giganteum*, *Peristeria elata*, *Epidendrum Mooreanum*, and *Aerides japonicum*.

Mrs. ERNEST HILLS, Redleaf, Penshurst (gr. Mr. Ringham), showed a group of well-grown and profusely-flowered *Miltonia vexillaria*.

Messrs. STANLEY & CO., Southgate, staged a group of *Cattleya Mossiæ* and *C. Mendelii*, with which were arranged good plants of *Oncidium varicosum*, *O. leucochilum*, *Miltonia Binotii Harrisii* (of very fine colour), *M. Cogniauxiæ*, *Cypripedium Transvaal*, *Masdevallia maculata*, &c.

R. I. MEASURES, Esq., Camberwell (gr. Mr. Smith), arranged an interesting group of over 50 species, hybrids, and varieties, among which were *Cœlogyne pandurata*, *Brassavola Digbyana*, *Cypripedium Curtisii* Cambridge Lodge variety, and the green-tinted *C. C. viride*, various *Masdevallias*, *Cirrhopetalum Cumingii*, *Cattleya Mendelii*, *C. Mossiæ*, and several hybrids.

Messrs. JAS. VEITCH & SONS, in their fine group of ornamental plants, arranged an effective centre of Orchids, in which several forms of the showy *Sobralia Veitchii* were attractively displayed, also a very handsomely-blotched form of *Odontoglossum crispum*, with flowers of large size, good form, and fine markings; several of the spotted-lipped variety of *Oncidium sarcodes*, good *Cattleya Mendelii* and *C. Mossiæ*, *Platyclinis filiformis*, and a selection of *Odontoglossum crispum* of the white typical form.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), showed *Cattleya Warszewiczii* Mrs. Francis Wellesley, a large and finely-formed flower of the lightly-coloured type known as *giganteum*. Its flowers are of good shape, the petals and lip being very broad. The sepals and petals are of delicate rose pink, and the lip is marbled and veined with purplish-rose with the usual light-coloured sides to the tube.

WALTER COBB, Esq., Normanhurst, Rusper (gr. Mr. C. J. Salter), showed *Odontoglossum Cobbianum*, a fine large flower of the *O. Othello* class, with strong evidence of *O. Harryanum* parentage in its handsome flower.

W. P. BURKINSHAW, Esq., Hessle, Hull, showed *Cattleya Mossiæ Reineckiana superba*.

J. W. JESSOP, Esq., Cliff Cottage, Rawdon, Leeds (gr. Mr. Wilkinson), sent a grand specimen of *Aerides multiflorum Lobbii*, with three spikes of its pretty rose and white flowers, the longest spike being branched and 2 feet in length.

Monsieur A. A. PEETERS, Chaussée de Forest, Brussels, showed *Odontoglossum crispum* La Dame Blanche, a very fine, clear white variety of the *O. c. xanthotes* class.

AWARDS.

FIRST-CLASS CERTIFICATE.

Lilio-Cattleya (*live*, *Lambeau's variety* (*L. pulma prestans* × *C. Dowiana aurea*), from Monsieur LAMBEAU, Brussels. A very remarkable form, much taller in growth and larger in the flower than any which have previously been shown. Sepals and petals deep purplish rose; the finely displayed lip is a shade of ruby-crimson, with gold lines from the base to the centre.

AWARDS OF MERIT.

Cymbidium Humboldtii, from Monsieur PEETERS, Brussels. A remarkable species

from Madagascar, with pale Apple-green flowers, the bases of the petals and the lip having blackish markings. The flowers bear some resemblance to those of *Cœlogyne pandurata*. It was shown by C. L. N. INGRAM, Esq. (gr. Mr. T. W. Bond), as *C. Loise-Chauvieri*, June 7, 1892, when it was awarded a Botanical Certificate.

Brasso-Cattleya Mary (*B. nodosa grandiflora* × *C. Lawrenceana*), from JEREMIAH COLMAN, Esq., Gatton Park (gr. Mr. W. P. Bound). A very pretty and distinct hybrid raised at Gatton Park, with flowers about 2 inches across, and shaped nearest to those of the *Brassavola* parent. The flowers are of cream white, lightly spotted with purple on the sepals and petals, and tinged with the same colour at the back. The lip is trumpet-shaped, white, spotted with bright rose-purple.

Fruit and Vegetables.

A group of fruit trees, principally in 12-inch pots, was sent by S. HEILBUR, Esq., Holyport, Maidenhead (gr. Mr. Camp). Several of the trees were fully 7 feet in height, and all were well fruited, and especially the Cherries. There were Brown Turkey Figs, Black Bigarreau, Bigarreau Napoleon and Emperor Francis Cherries, Early Rivers Nectarine, and Peregrine Peach. It was unfortunate that this collection had not one face only, as being disposed with two fronts, its excellence was much hidden.

Messrs. G. BUNYARD & CO., Maidstone, had also a collection of fruit trees in pots. There were some 36 trees, but they were much smaller than those in the foregoing exhibits, and in 10-inch pots. Their height ranged from 3 to 5 feet. The fruits included Cherries Geant de Hedelfingen, Bohemian Black, Black Eagle, Noble, and Turkey Heart (black), and Governor Wood, Emperor Francis, Windsor, Florence, and Alton Heart (reds); Peaches Duchess of Cornwall, Duke of York, and Earliest of All; Pears Marguerite Marillat and Louise Bonne of Jersey; and Apple Beauty of Bath. All these trees were well fruited. The collection also had dishes of well-kept Apples, including the varieties Gooseberry, Calville Malingre, Calville des Femmes, very fine and firm, Belle du Bois, Alfriston, Costard, Calville Rouge, Murfitt's Seedling, and Smart's Prince Albert. There were also numerous dishes of Strawberries, including Leader, Louis Gauthier, Sir J. Paxton, Trafalgar, Dumbarton Castle, Royal Sovereign, Bedford Champion, President, Givon's Late Prolific, Reward, and others; also several dishes of Cherries and of Black Currants, including the Boskoop Giant, Champion, and other better known varieties.

In a crowded position, Messrs. HUGH LOW & CO., Bush Hill Park, had a group of Fig trees in pots, each one carrying an abundance of small green fruits, but none were named.

GATHERED FRUIT was represented, otherwise than already mentioned, by a collection of Strawberries, staged by Messrs. LAXTON BROS., Bedford. Large baskets of very fine fruit of Bedford Champion, a new variety, were conspicuous. The new Reward was also shown in good form. Other varieties in smaller baskets or dishes were The Laxton, Sir J. Paxton, Royal Sovereign, Gunton Park, and Mentmore. Generally the fruits were very fine and well coloured.

VEGETABLES were limited to three bundles of very fine Asparagus from Mr. A. J. HARWOOD, Colchester, and to samples of the new Pea "Quite Content," shown under glass cases by Messrs. JAS. CARTER & CO., Holborn.

Groups of Plants Exhibited Out-of-Doors.

Messrs. J. VEITCH & SONS, Royal Exotic Nurseries, Chelsea, exhibited many hardy plants of recent cultivation. The chief subjects were *Escallonia langleyensis*—this has flowers of crimson colour, and they are smaller than those of *E. macrantha*; *Fremontia californica* has chalice-shaped flowers of an orange colour—these are thickly clustered on the old wood; *Aconitum Hemsleyanum* is a tall climber from Western China, having light-blue-coloured flowers and digitate, palmate leaves. Other plants included *Clematis cœrulea odorata*, having dark-blue petals and conspicuous white stamens; *Lonicera tragophylla*, with numerous orange-coloured long, tubular flowers—it grows to a height of 20 to 30 feet; *Genista tinctoria flore pleno*; *Meli-*

osma myriantha, with close spikes of minute, white flowers; the variegated form of *Andromeda japonica*, *A. speciosa cassinifolia*; *Actinidia chinensis*—the young shoots and leaves of this plant are hairy and of a crimson tint; *Lonicera grata*, *Magnolia Thomsonii glauca*, *Cytisus Shipkaensis*—a variety having creamy-white flowers; *Ivies*, *Bambusas*, a few specimen Conifers, *Lilium speciosum Vitis Henryi*, &c. About 40 large potsful of Sweet Peas, very robust in growth and finely flowered, formed a pleasing feature of this exhibit.

Messrs. T. CRIPPS & SON, Tunbridge Wells Nurseries, showed a large group of Acers, mostly of Japanese origin, and amongst them were several fine specimens of *A. palmatum palmatifidum*, 7 feet in lateral diameter; *Retinospora obtusa Crippsii*, an effective, golden-leaved variety; variegated *Ulmus*, *Liquidamber*, *Sycamore*, and other species.

Messrs. J. CHEAL & SONS, The Nurseries, Crawley, Sussex, had a large exhibit of ornamental shrubs and trees, including Japanese Acers, *Quercus concordia*, *Ilex marmorata*, a variety with leaves edged and mottled with yellow; *Kalmias*, *Abies pungens glauca*, *Ruta graveolens variegata*, *Catalpa Kœhneri*, with a greenish-yellow border to the leaves; *Veronica Purple Queen*, a showy flowered variety; climbing Roses; purple Beech, *Salisburia adiantifolia*, Weeping Birch, *Acer Negundo variegata*, and other ornamental trees. This firm also exhibited a pergola made of Larch poles and pleasingly furnished with climbing plants in variety.

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, showed very extensively tree Ivies having variegated foliage. The plants ranged from 1 foot to 8 feet in height, and they were robust and of fine colouring. He also showed two hardy, dwarf-growing Fuchsias, viz., *F. Americana gracilis* and *F. myrtifolia minor*, and the taller-growing *F. Riccartonii* "Fly-see."

Messrs. W. CUTBUSH & SON, nurserymen, Highgate, showed trained specimen Sweet Bays, and a large array of clipped trees in Box and Yew, having the form of coffee-pots, dogs, tables, chairs, sofas, various birds, dolphins, &c.

Messrs. W. FROMOW & SONS, Sutton Court Nursery, Chiswick, had a large number of Japanese Acers in variety and a number of Bamboos, *Retinosporas*, Sweet Bays, &c.

Messrs. SUTTON & SONS, the Royal Nurseries, Reading, showed, in a glass case placed under a tent open at the sides, a group consisting of tuberous-rooting Begonias of the finer double-flowered varieties, Gloxinias, Ferns, Caladiums, &c. *Nemesias* grouped at the four entrances to the tent were very pretty and floriferous as grown in small pots.

Messrs. JAMES CARTER & CO., High Holborn, London, filled a small tent near the entrance to the big marquee with showy flowering plants of tuberous-rooting Begonias and Gloxinias. They had also vases of Sweet Peas, and in one corner in the tent pink Petunias. Messrs. CARTER also showed their new culinary Pea Quite Content and Tomato Sunrise.

HORTICULTURAL SUNDRIES.

The very extensive lawns at Holland House enable the Society to invite exhibits of up-to-date and standard articles of daily use in the garden, such as tools, insecticides, pumps, sprays, tubs, pottery, garden furniture, &c.

Garden seats, tables, balustrading, &c., were shown by Messrs. CASTLES CO., LTD., 30, Radnor Street, Chelsea. These articles of garden furniture were made of teak wood from old ships.

Messrs. HEADLEY & EDWARDS, LTD., Cambridge, showed seats, tents, arches in iron, garden hose, and reels.

Messrs. DUNCAN TUCKER & SONS, LTD., Tottenham, N., exhibited a conservatory of good design, span-roofed garden frames, summer-house and seats.

Messrs. SHANKS, Arbroath and London, showed motor, horse, and hand mowers.

Messrs. STIFF & SONS, London, were exhibitors of garden pottery, such as vases and pedestals in cream and red coloured ware.

Messrs. INMANS & CO., Royal Rustic Works, Stretford, Manchester, showed rustic summer-houses, garden seats, vases, tables, etc.

Mr. H. SCOTT, Woodside, South Norwood, showed rustic work and summer-houses.

Messrs. LIBERTY & Co. showed rustic work, viz., bordering vases, &c. Messrs. GREEN showed lawn mowers in variety. Messrs. W. WALTERS & Co., Water Lane, Great Tower Street, E.C., exhibited screens, cupolas, and arches, some of the objects stained with carbolineum so as to show the grain of the wood.

Messrs. RILEY, Herne Hill, S.E., showed an enormous exhibit, consisting of arbours, arches, seats, and summer-houses.

Messrs. T. J. SYER & Co., 45, Wilson Street, Finsbury, E.C., showed ladders, steps, and a repairing bench (portable) for estate work. This firm also showed a considerable collection of tools and implements for garden use, including a malleable iron vice for fitting to a bench.

Mr. J. GEORGE, 14, Redgrave Road, Putney, had an extensive lot of gardeners' sundries of all sorts, including Orchid peat of fine quality, chemical manures, fumigating material, &c.

Mr. D. G. CORNWELL showed the "Handy Pack" basket for fruits, and cases to hold 50 baskets, and other items.

DE LUZY FRERES, 99, Lilford Road, Camberwell, showed portable spraying machines, fumigators, bellows, &c.

Mr. H. PATTISON, 1, Farm Avenue, Streatham, showed lawn boots for horses and donkeys, also weed extractors.

Mr. J. FINCHES, No. 3, Crown Buildings, Camberwell, S.E., showed the durable Acme labels for trees and pot plants.

Messrs. MERRYWEATHER & SONS, 63, Long Acre, W.C., displayed pumps and pumping engines for farm and garden use; also spraying machines for fruit trees, motor pumps, water hose, &c.

Mr. G. H. SAGE, 71, Manor Road, Richmond, had "flower displays" made of brass wire. He is agent for the sale of Wakeley's Hop Manure, of which samples were shown.

THE HARROW NURSERY Co. showed split bamboo blinds for use in glasshouse shading; they are very durable.

Messrs. W. WOOD & SONS, LTD., Wood Green, London, N., showed blind materials, woven, and of bamboo; manures, insecticides, hose for garden use, flower-pots, and pot-holders of iron, watering cans, pumps, fumigators, wood-wool in various colours; rugs, baskets, flower sticks, and tying materials.

Messrs. W. VOSS & Co., Glengall Road, Millwall, showed insecticides.

THE SOLDIERS' AND SAILORS' HELP SOCIETY had an exhibit of miscellaneous basket work, trays, &c.

Messrs. D. DOWEL & SON, Ravenscourt Avenue, Hammersmith, W., showed garden pottery.

Mr. F. HICKSON, Hampstead, showed Messrs. Valls and Co.'s "Beetlecuter," and various other insecticides.

THE ANGLO-CONTINENTAL Co. (late Ollendorff), 15, Leadenhall Street, London, showed chemical manures and Peruvian guano.

Messrs. W. HERBERT & Co., The Hop Exchange, S.E., showed sundries for the garden, chemical manures, insecticides, tools, &c.

Awards made by the Council.

THE SHERWOOD CUP.

J. Bradshaw, Esq.

GOLD MEDALS.

Jeremiah Colman, Esq.; Jas. Voitch & Sons, Ltd.; Paul & Son; Wm. Cutbush & Son; T. S. Ware, Ltd.; H. B. May & Sons; Amos Perry; Sander & Sons; R. Wallace & Co.; Alex. Dickson & Sons.

SILVER CUPS.

R. I. Measures, Esq.; S. Heilbut, Esq.; Geo. Bunyard & Co.; L. R. Russell; R. & G. Cuthbert; Hugh Low & Co.; Charlesworth & Co.; C. W. Breamore; T. Cripps & Sons, Ltd.; Dobbe & Co.; Barr & Sons; J. Laing & Sons; F. Lilley; Chas. Turner; H. Cannell & Sons; Hobbies, Ltd.; Frank Cant & Co.; R. C. Notcutt; M. Pritchard; Wm. Artindale & Sons; and Blackmore & Langdon.

SILVER-GILT FLORA MEDALS.

R. H. Bath, Ltd.; G. Jackman & Son; John Peed & Son; J. Cheel & Sons; Kelway & Son; E. W. King & Co.; James Carter & Co.; G. and A. Clark, Ltd.; B. Ladhams, Ltd.; Wm. Paul & Son; J. Gurney Fowler, Esq.; W. Fromow & Sons; and G. Reuthe.

SILVER-GILT KNIGHTIAN MEDAL.

Messrs. Laxton Bros.

SILVER-GILT BANKSIAN MEDALS.

Messrs. Sutton & Sons; E. E. Grimson; B. R. Cant & Sons; A. J. Upton; A. F. Dutton; and Sir Geo. Faudel-Phillips.

SILVER FLORA MEDALS.

Messrs. Gunn & Sons; Wm. Bull & Sons; T. Rochford & Sons, Ltd.; Lt.-Colonel Heseltine; A. L. Gwillim; W. Icton; J. Forbes; and Mr. Page.

SILVER KNIGHTIAN MEDAL.

Mr. A. J. Harwood.

SILVER BANKSIAN MEDALS.

Mr. Burroughs; W. R. Chaplin; H. C. Pulham; H. H. Crane; H. Merryweather & Sons, Ltd.; G. Stark & Son; S. Bide & Sons; Misses Hopkins; V. Slade; W. J. Godfrey; T. Jannoch; Stanley & Co.; and Mrs. E. Hills.

HORTICULTURAL SUNDRIESMEN.

SILVER-GILT FLORA MEDALS.

Mr. G. W. Riley, and W. Wood & Son, Ltd.

SILVER-GILT BANKSIAN MEDALS.

Messrs. Merryweather & Sons, Ltd.; Innams & Co.; T. Green & Son, Ltd.; and Ransomes, Sims, & Jefferies, Ltd.

SILVER FLORA MEDALS.

Mr. H. Scott; Castle's Shipbreaking Co., Ltd.; Pulham & Son; A. S. Shanks & Son, Ltd.; J. George; Headley & Edwards, Ltd.; M. S. Watts; D. Tucker & Sons, Ltd.; Liberty & Co.; and T. J. Syer & Co.

SILVER BANKSIAN MEDALS.

Messrs. Champion & Co.; D. Dowel & Son; Herbert & Co.; and J. Siff & Sons.

BRONZE BANKSIAN MEDALS.

Abbott Bros.; G. H. Sage; W. Voss & Co.; Gillard & Co.; Walters & Co.; and J. Williams.

FRUIT AND VEGETABLE COMMITTEE'S VISIT TO WISLEY.

JULY 5.—Eight members of the Fruit Committee of the R.H.S. travelled to Wisley on this date to inspect the collection of Strawberries. The sub-committee consisted of Mr. O. Thomas (chairman), and Messrs. Markham, Allan, Bates, Foster, Dean, Kelf, and Rivers. The soil at Wisley is sandy, but Strawberries do well in it, the exceptions being a few that need stiff land. The varieties Leader and Kentish Favourite were both carrying heavy and early crops. Royal Sovereign proved one of the very best of the varieties inspected. Fillbasket was carrying a heavy crop, but the fruits were late in ripening. Monarch, President, Bedford Champion, La Grosse Sucrée (the earliest to ripen), and Latest of All were bearing large crops. Most of the plants were two years old. No award was made to a variety. The collection of Rhubarb close by was also examined, and it was agreed that the best kinds as seen were Daw's Champion, Allis's Champion (scarcely as good as the first named), Crimson Perfection, Paragon, and Victoria. It was considered that a selection of half a dozen varieties would embrace sufficient for all purposes, and that the rest might be dispensed with. Edible Peas do not form a special trial this year, but Dwarf Kidney Beans, Onions, and Potatoes were all looking extremely well, and promise to furnish capital trials. In a few cases, "curl" is much in evidence in Potato haulm, and in this connection it would be interesting to know where the seed tubers of these diseased plants were grown, in what kind of soil, and the general character of the stocks from which they were derived. In the houses a primary feature is a trial of Melons, all the plants being of exceptionally good culture. The fruits should be ready for inspection by the end of the present month.

NATIONAL ROSE.

JULY 4.—In our last issue we were enabled to publish some of the awards made at this show, but consideration of time precluded us from giving a detailed report.

NURSERYMEN'S CLASSES.

In the important class for 72 blooms of distinct varieties, the 1st prize in which included the Champion Challenge Trophy, Messrs. HARKNESS & Co., Hitchin, were placed 1st. Their exhibit included the best Hybrid Tea Rose in the show, and to this a Silver Medal was awarded. Other fine blooms were shown in the varieties Comte de Raimbaud, Duke of Teck, Robert Scott, Bessie Brown, Suzanne Marie Rodocanachi, Ulrich Brunner, Marie Baumann, Mrs. T. Roosevelt, Duke of Edinburgh, Mrs. Sharman Crawford, Gustave Piganneau, Dupuy Jamain, Gloire de Margottin, and J. B. Clark. 2nd, Messrs. B. R. CANT & SONS, Colchester, with a very even and regular collection of flowers, consisting of H.P., T., and H.T. varieties. The following were the best examples shown: C. J. Graham, Marquise Litta, Gustave Grunerwald, Marechal Niel, Florence Pemberton, Madame Eugenie Verdier, Medea, Lady M. Beaucherc, Betty, White Lady, Ulster, Crown Prince, Ulrich Brunner, and A. K. Williams. 3rd, Messrs. F. CANT & Co., Braiswick Nursery, Colchester. There were two other exhibitors in this class.

A class was also provided for 48 blooms in distinct varieties. The 1st prize was won by Mr. G. MOUNT, Canterbury, with large, perfect flowers of well-assorted colours, of which we admired General Jacqueminot, J. B. Clark, Ulrich Brunner, Commandant Felix Faure (a very dark, velvety bloom), W. J. Grant, Richmond, Prince de Bulgarie, Fisher Holmes, Mrs. Sharman Crawford, Horace Vernet, Dean Hole, Duke of Teck, Marquise Jeanne de la Chataigneraye, Duke of Teck, and Hugh Dickson. 2nd, Messrs. G. PRINCE & Co., Longworth, Berks., with a superior lot of H.T.s, T.s, and H.P.s, including fine blooms of Bessie Brown, Comtesse de Nadaillac, Maman Cochet, Ulrich Brunner, Mrs. E. Mawley, and Lady Ashtown. 3rd, Messrs. J. BURRELL & Co., Cambridge.

The smaller class for 16 distinct varieties, three blooms of each, resulted in Mr. G. MOUNT, Canterbury, being placed 1st, with a very excellent boxful, consisting of the varieties J. B. Clark, Liberty, Hugh Dickson, Frau Karl Druschki, Chas. Lefebvre, Caroline Testout, Mildred Grant, Mrs. W. J. Grant, Mrs. John Laing, Duke of Edinburgh, Ulrich Brunner, and White Lady. 2nd, Messrs. J. BURRELL & Co., Cambridge, whose exhibit included blooms of Mrs. Ed. Mawley, Ulrich Brunner, and Hugh Dickson. 3rd, Messrs. G. and W. H. BURCH, Peterborough.

TEA AND NOISETTE SECTION.

In the class for 24 blooms of distinct varieties, to which allusion was made in last week's issue, the D'Ombra Challenge Cup, as well as the 1st prize, was awarded to Messrs. G. PRINCE & Co., Longworth, Berks.

Twelve Tea or Noisette blooms, distinct.—1st, Messrs. BURRELL & Co., in whose box the best Tea Rose was shown, viz., Mrs. Edward Mawley, to which a Silver Medal was awarded. The 2nd and 3rd prizes fell to Mr. J. MATTOCK and Mr. G. MOUNT, in the order of their names.

Fourteen varieties distinct, three blooms of each.—The 1st prize was won by Mr. GEO. PRINCE, who had in this competition many of the varieties that he showed in others, the exceptions being Bridesmaid, Madame Cusin, E. V. Hermanos, Lady Mary Corry, and Madame J. Graveaux. Mr. PRINCE states that he uses as a stock the seedling briar, Roses on this stock being the earliest and the latest to bloom. 2nd, Messrs. F. CANT & Co., whose blooms of Souvenir d'un Ami, Mrs. E. Mawley, Golden Gate, and Maman Cochet were very fine. 3rd, Mr. H. DREW.

ROSES IN VASES.

The principal class for Roses in vases was that for twelve distinct varieties, seven blooms of each, to include not more than six blooms of Teas or Noisettes. Mr. GEO. MOUNT won the 1st prize with good quality blooms of Mrs. W. J. Grant, the lovely blush-coloured Mabel Grant, Bessie Brown, J. B. Clark, Capt. Hayward, Dean Hole, Frau Karl Druschki, Killarney, and Mrs. John Laing. 2nd, Messrs. D. PRIOR & SON, Colchester, who showed fine blooms of Mrs. S. Crawford, Bessie Brown, Frau Karl Druschki, Liberty, and General Jacqueminot. 3rd, Messrs. F. CANT & Co.

Nine distinct varieties of Teas and Noisettes, seven blooms of each.—1st, Messrs. GEO. PRINCE & Co., with a beautiful lot of blooms, of which the following were the finer:—Maman Cochet, Anna Olivier, Mrs. E. Mawley, Souvenir de Pierre Notting, and Comtesse de Nadaillac, this last being of extra fine quality. 2nd, Mr. H. DREW, Longworth, Berks., with excellent flowers of white Maman Cochet, Comtesse de Nadaillac, Mrs. E. Mawley. 3rd, Messrs. F. CANT & Co., Colchester. There were five competitors in this class.

Eleven distinct varieties, not fewer than three sprays of each.—1st, Mr. J. MATTOCK; 2nd, Mr. G. PRINCE, who showed his blooms on very long stalks in metal holders 2½ feet high; 3rd, Mr. G. MOUNT, who showed blooms in close bouquets and long sprays on boughs.

DECORATIVE ROSES.

In the class for six distinct varieties, that were required to be shown on a bamboo stand, Mr. G. MOUNT won the 1st prize with the varieties Laurent Messimy, Marquise de Salisbury, Queen Mab (a China Rose), Claire Jacquier, Mme. Abel Chatenay, and Evergreen Gem. 2nd, Messrs. GEO. PRINCE & Co.

OPEN CLASSES.

Eighteen blooms of any crimson Rose.—1st, Messrs. D. PRIOR & SON, with the new variety Liberty; 2nd, Mr. G. MOUNT, with Richmond; 3rd, Messrs. R. HARKNESS & Co., with Ulrich Brunner.

Eighteen blooms of any white or yellow Rose.—1st, Messrs. BIDE & SONS, Farnham, Surrey; 2nd, Messrs. D. PRIOR & SON, with Frau Karl Druschki; 3rd, Messrs. B. R. CANT, with Countess of Derby.

Eighteen blooms of any Rose other than a white, yellow or crimson variety.—1st, Messrs. J. BIDE & SONS, with Queen of Spain, a handsome, compactly-formed flower of the palest flesh tint; 2nd, Messrs. F. CANT & Co.

AMATEURS.

Open to growers of fewer than 500 plants.—Mrs. E. HORNE, Park House, Reigate, staged the best blooms in the class for nine blooms of distinct varieties, having large, almost perfectly-formed blooms of T. and H.P. varieties. A piece of plate given by L. S. PAWLE, Esq., accompanied the 1st prize.

An extra class was provided for amateurs.—This was for 24 blooms, distinct. The 1st prize was awarded A. LEGGETT, Esq., 24, Macedon Road, Colchester, for very good blooms of T. and H.P.s., some being equal to any in the show; 2nd, H. W. RICHARDS, Esq., Westridge, Ryde, with an excellent, even lot of flowers.

Twelve blooms, distinct varieties.—1st, A. TATE, Esq., Downside, Leatherhead, who was awarded a Silver Cup; and his bloom of Mamie—a full, pink-coloured Rose—was awarded a Silver Medal, as being the best Rose other than Tea or Noisette in the show; 2nd, E. B. LINDSELL, Esq., Hitchin, Herts.

Nine Teas and nine Hybrid Tea blooms.—O. G. ORPEN, Esq., was placed 1st for good flowers, but they were unequal in size; 2nd, Mr. J. WAKELEY, Rainham, Kent.

Six new Roses, distinct.—The 1st prize was won by E. J. HOLLAND, Esq., Sutton, Surrey, with good blooms of Dean Hole, Hugh Dickson, Mrs. J. Bateman, Mrs. Theodore Roosevelt, J. B. Clarke, and Lady Ashton. A piece of plate presented by Mr. HUGH DICKSON, Belfast, went with this prize.

TEA AND NOISSETTE ROSES.

A. H. GRAY, Esq., Beaulieu, Bath, won in the class for 18 blooms of these varieties with shapely examples of moderate size. The National Rose Society's Tea and Noisette Challenge Trophy and Replica for Amateurs was included in the 1st prize; 2nd, Rev. F. R. BURN-SIDE, Great Stamburgh, Essex.

Twelve blooms of Tea and Noisette Roses.—1st, T. B. GABRIELLE, Esq., Hart Hill, Woking, whose flowers were all of high quality save two; 2nd, Dr. T. C. PALLETT, Earl's Colne, Essex.

A class was provided for growers of fewer than 100 plants.—1st, ALAN SEARLE, Esq., Ashton Lodge, Basset, Hants. This prize included a piece of plate given by the Prince Memorial Fund.

A class was also provided for exhibitors who have never won a prize at any exhibition of the Society. It was for six blooms of Tea or Noisette Roses in not fewer than three varieties.—1st, J. F. BLYTHE, Esq., Hill House, Nayland, Suffolk, whose best blooms were Mrs. E. Mawley, Medea, Midas, and Souvenir de S. A. Prince.

NEW ROSES.

Rose Queen of Spain.—A Gold Medal was awarded to this pale flesh-coloured H.T. variety, shown by Messrs. BIDE & SONS (see fig. in *Gardeners' Chronicle*, July 14, 1906, p. 33).

Rose Lady Helen Vincent.—A Gold Medal was also awarded for this new variety, which is illustrated at fig. 13. (See also description on p. 36.)

Cards of Commendation were awarded to Messrs. PAUL & SONS and Mr. H. E. WELLER for, respectively, "Goldfinch" and "Mrs. H. Weller."

NEW METHOD OF SHOWING ROSES.

The 1st prize and a Silver-Gilt Medal was gained by Mr. L. COLLETT, Nantwich, for an arrangement by which the flowers are placed in metal tubes secured by clips to a light iron frame that may be put to any angle.

An equal 1st prize was awarded Messrs. G. PRINCE & Co. for a somewhat similar arrangement.

A Card of Commendation was given A. HILL GRAY, Esq., Bath, for flower holders fixed in holes made in a sheet of looking glass.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

JULY 8.—The monthly committee meeting of this society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on the above date. Mr. Thomas Winter (vice-chairman) presided. Five new members were elected, and one nominated. The death certificate of Mr. Eli Cook, of Letton Court, Hereford, was produced. The sum standing to his credit in the society's books was passed for payment to his nominee, the amount being £36 4s. 4d. A cheque was granted to Mr. John Hy. Hodge, a lapsed member, having reached 60 years of age, the amount being £18 16s. 8d. The amount paid for sickness during the past six months has been heavy, compared with the corresponding period last year, as the following figures will show:—

	1906.	1907.
	£ s. d.	£ s. d.
February ..	21 7 0	February .. 55 6 0
March ..	29 15 0	March .. 49 3 0
April ..	30 4 0	April .. 43 2 0
May ..	29 8 0	May .. 52 0 0
June ..	20 10 0	June .. 24 8 0
July ..	20 18 6	July .. 17 2 0
	£152 2 6	£241 1 0

being a difference of £88 18s. 6d. in favour of 1906.

Obituary.

EUGENE-LOUIS-CELESTIN BARBIER.—We regret to announce the death of M. Barbier, a member of the firm of Barbier et Cie, nurserymen, Orleans, France. M. Barbier, who was 57 years of age, died on June 22, at Orleans.

CHARLES JORDAN, I.S.O.—Readers will regret to learn of the death of the able superintendent of Hyde Park, on the 9th inst. Only in our last issue we announced the honour conferred upon Mr. Jordan by his Majesty the King, and now it is our duty to chronicle his decease. Previous to his appointment at Hyde Park, the late Mr. Jordan was superintendent of Regent's Park, and whilst there he was selected by H.M. Office of Works to make the necessary alterations in the grounds of Holyrood Palace before they were thrown open to the public. Deceased had also much to do with the extensive alterations in St. James' Park necessitated by the national monument to Queen Victoria. Mr. Jordan was a member of the original committee of the British Gardeners' Association. The funeral will take place at 4.15 p.m. on Saturday, the 13th inst., at the City of Westminster Cemetery, Hanwell.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending July 10.

Still another cold and wet week.—This proved a cold week throughout, and was the fourth unseasonably cold one in succession. Since the month began there has not been a single unseasonably warm day, and only one warm night. As regards temperature the most noteworthy feature of the past week has been the uniformity of the highest day temperatures, which have ranged only between 59° and 64°. The ground readings are very low for July, the temperature at 2 feet deep being 6° colder, and at 1 foot deep 6° colder, than is seasonable. Rain has fallen on all but one day of the present month, but to the aggregate depth of less than three-quarters of an inch. So moderate have been the recent falls of rain that during the past four weeks there has been on no day any measurable percolation through the bare soil gauge. The sun shone on an average for 4½ hours a day, which is two hours a day short of the mean daily duration for the month. The winds were variable in force, but as a rule of moderate strength, and came almost exclusively from some southerly or westerly point of the compass. The average amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by as much as 9 per cent.

JUNE.

An exceptionally cold, sunless, and windy June, with a remarkably frequent rainfall.—During the 21 years over which my records at Berkhamsted extend there has been only one June in which the mean temperature has been as low, and that was in 1903. Taking the day temperatures alone they were colder than in any June of the same period, whereas the nights were of about average warmth. On the warmest of the only two warm days the temperature in the thermometer screen rose to 72°, which is the lowest extreme maximum temperature I have yet recorded here in June. On the other hand, the lowest reading registered on the surface of the lawn, 36°, is an exceptionally high extreme minimum for the month. Rain fell on no fewer than 20 days,

and to the total depth of 2½ inches, or slightly below the June average. The sun shone on an average for 4½ hours a day, which is 1½ hours a day below the mean duration for the month. We have to go back 17 years in order to find as gloomy a June. In no previous June during the past 21 years has the wind been, as a rule, as high, and yet in no single hour did the mean velocity exceed 19 miles—direction W.N.W. The average amount of moisture in the air at 3 o'clock in the afternoon was 5 per cent, in excess of a seasonable quantity for that hour. E. M., Berkhamsted, July 10, 1907.

MARKETS.

COVENT GARDEN, July 10.

Cut Flowers, &c.: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Azalea mollis, per dozen bunches	3 0-4 0	Marguerites, white, p. dz. bunches	2 0-3 0
Anemones, per dz. bunches	3 0-4 0	— yellow, per dz. bunches	1 6-2 0
Bouvardia, per dz. bunches	2 0-3 0	Myosotis, per doz. bunches	1 6-2 0
Calla æthiopica, p. dozen	1 6-2 6	Odontoglossum crispum, per dozen blooms	2 0-2 6
Carnations, per dozen blooms, best American	1 6-3 0	Pæonies, per doz. bunches	4 0-8 0
— smaller, per doz. bunches	9 0-12 0	Pantracium, per dozen fls.	3 0-4 0
— Malmisons, p. dozen blooms	6 0-10 0	Pelargonium, show, per doz. bunches	4 0-6 0
Cattleyas, per doz. blooms	10 0-12 0	— Zonal, double scarlet	4 0-6 0
Cornflower, per dz. bunches	2 0-3 0	Poppies, Iceland, doz. bunches	4 0-8 0
Eucharis grandiflora, per doz. blooms	2 0-3 0	— Oriental	4 0-8 0
Gardenias, per doz. blooms	2 0-3 0	— Shirley	2 0-3 0
Gladiolus, The Bride, per doz. bunches	3 0-5 0	Pyrethrums, per dozen bunches	2 0-4 0
— various	4 0-9 0	Ranunculus, per dozen bunches	4 0-6 0
Gypsophila elegans p. dz. bunches	2 0-3 0	Rhodanthé, per dz. bunches	3 0-4 0
Iris, German, per doz. bunches	4 0-6 0	Roses, 12 blooms, Niphetos	1 0-3 0
— Spanish, p. dz. bunches	4 0-9 0	— Bridesmaid	2 0-3 0
Lapageria alba, dz. bunch	1 0-1 6	— C. Testout	2 0-3 0
Lilac, white, per bunch	1 0-3 0	— General Jacqueminot	0 6-1 0
Lilium auratum	2 0-3 0	— Maréchal Niel	1 6-3 0
— candidum, bch.	1 0-2 0	— Kaiserin A. Victoria	1 6-3 0
— lancifolium, rubrum and album	1 6-2 0	— Mrs. J. Laing	1 0-3 0
— longilorum	1 6-2 6	— C. Mermet	1 0-3 0
Lily of the Valley, p. dz. bunches	6 0-9 0	— Liberty	2 0-4 0
— extra quality	10 0-15 0	— Mad. Chateau	1 0-3 0
Mignonette, per dz. bunches	3 0-4 0	Stephanotis, per dozen trusses	3 0-5 0
		Stocks, per dozen bunches	2 0-3 0
		Sweet Peas, p. doz. bunches	1 0-3 0
		Tuberose, per dz. blooms	0 4-0 6

Cut Foliage, &c.: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Adiantum cuneatum, per dozen bunches	4 0-6 0	Galax leaves, per dozen bunches	2 0-2 6
Asparagus plumosus, long trails, per doz. bunch	8 0-12 0	Hardy foliage (various), per dozen bunches	2 0-6 0
— medium, bunch	1 6-2 0	Ivy-leaves, bronze long trails per bundle	2 0-2 6
— Sprengeri	0 6-1 0	— short green, doz. bunches	1 6-3 0
Berberis, per doz. bunches	2 0-2 6	Moss, per gross	2 0-3 0
Croton leaves, bch.	1 0-1 6	Myrtle (English), small-leaved, doz. bunches	4 0-5 0
Cycas leaves, each	1 6-2 0	— French, dozen bunches	4 0-6 0
Fern, English, per dozen bunches	1 0-2 0	— French, dozen bunches	1 0-1 6
— French, dozen bunches	1 0-3 0	Smilax, p. dz. trails	1 6-2 6

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Ampelopsis Veitchii, per dozen	6 0-8 0	Ferns, in thumbs, per 100	7 0-10 0
Aralia Sieboldi, dz.	4 0-6 0	— in small and large 60's	16 0-25 0
— larger	9 0-12 0	— in 48's, per dz.	4 0-10 0
Araucaria excelsa, per dozen	12 0-30 0	— in 32's, per dz.	10 0-18 0
Aspidistras, green, per dozen	18 0-30 0	Ficus elastica, per dozen	8 0-10 0
— variegated, dz.	30 0-42 0	— repens, per doz.	4 0-6 0
Asparagus plumosus nanus, doz.	9 0-12 0	Fuchsias, per doz.	4 0-8 0
— Sprengeri, dz.	9 0-12 0	Heliotropiums, per dozen	4 0-6 0
— tenuissimus	9 0-12 0	Hydrangea Thos. Hogg, per doz.	12 0-18 0
Boronia megastigma, per dz.	12 0-30 0	— Hortensia, per dozen	8 0-12 0
— heterophylla	12 0-24 0	— paniculata, per dozen	12 0-30 0
Calceolarias, yellow	4 0-8 0	Kentia Belmoreana, per dozen	12 0-18 0
Clematis, per doz.	8 0-9 0	— Fosteriana, p. dozen	12 0-21 0
— in flower	12 0-18 0	Latania borbonica, per dozen	12 0-18 0
Cocos Weddelliana, per dozen	9 0-18 0	Lilium longiflorum, per dz.	12 0-24 0
Coleus, per dozen	3 0-5 0	— lancifolium, per dozen	12 0-18 0
Coreopsis, per doz.	6 0-10 0	Lily of the Valley, per dozen	10 0-12 0
Crasulias (Kalozyanthos), per dz.	9 0-12 0	Lobelia, per dozen	5 0-6 0
Crotons, per dozen	12 0-30 0	Marguerites, white, per dozen	4 0-3 0
Cyperus alternifolius, dozen	4 0-5 0	— yellow	12 0-18 0
— lasus, per doz.	4 0-5 0	Mignonette, per dz.	5 0-8 0
Dracanas, per doz.	9 0-24 0	Musk, per dozen	4 0-5 0
Erica Cavendishii, per dozen	24 0-36 0		
— ventricosa, per dozen	18 0-30 0		
Euonymus, per dz.	4 0-9 0		

Plants in Pots, &c.: Average Wholesale Prices (Contd.)	
s.d. s.d.	s.d. s.d.
Pelargonium, Ivy-leaved, Mde. Crouse and Galilee, p. dozen	4 0-6 0
— Zonals, per dz.	4 0-6 0
— show	6 0-9 0
Petunias, double, per dozen	4 0-8 0
— single, per dz.	3 0-6 0
Rhodanthe, per dz.	4 0-6 0
Roses, H.P.s., dz.	12 0-24 0
— Ramblers, each	5 0-21 0
Saxifraga pyramidalis, per dozen	12 0-18 0
Selaginella, dozen	4 0-6 0
Spiraea japonica, per dozen	5 0-8 0
Verbena, Miss Willmott, doz.	6 0-9 0

Fruit: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Apples, per box, Tasmanian	8 6-9 0
— London Pippins	8 6-9 0
— Scarlet Pear-mains	6 6-7 6
— Scarlet Nonpareils	7 6-8 0
— Sturmer Pippins	6 0-7 0
— French Crabs	6 0-7 0
— Prince Alfreds	6 6-7 6
— Alfriston	7 0-7 6
Australian, box	7 0-9 0
— Monro's Favorite, per box	7 0-9 0
— Roman Beauty	7 0-8 0
— Cleopatras	7 0-9 0
— Jonathan	10 6-12 0
— New York Pippins	7 0-9 0
— Five Crowns	6 6-7 0
— Rymer	6 0-7 0
Apricots (French), per box	1 2-1 4
— French, cases	2 6-3 6
— French, ½ sieve	4 6-5 0
Bananas, bunch:	
— No. 2 Canary	5 0 —
— No. 1	5 6-6 0
— Extra	6 6-7 6
— Giants	8 0 —
— Jamaica	5 0-5 6
— Loose, per dz.	0 9-1 3
Cherries (English), ½ sieve	3 6-10 0
— 1 sieve	2 0-5 0
— French, box	1 3-3 0
— French, ½ sieve	4 0-8 0
— French, 1 sieve	3 0-4 6
Cranberries, case	8 0-8 6
Currants (English), Red, ½ sieve	3 0-4 6
— French, black, ½ sieve	4 6-5 0
— French, red, handle basket	1 6-2 0
Dates (Tunis), doz. boxes	2 6 —
Figs (Guernsey), p. dozen	1 6 6 0
Gooseberries (English), ½ sieve	1 6 4 0
Grape Fruit, case	19 0-22 0
Grapes (English), Hambro's, p. lb.	8 0-1 6
— Alicante, pr. lb.	1 0-1 6
— Gros Maroc, per lb.	0 9-1 6
— English Muscats, per lb.	1 6-3 0
— Belgian Hambro's, per lb.	0 8-1 3
Lemons:	
— Messina, case	10 0-14 0
— Naples, p. case	20 0-25 0
Lychees, per box	1 0 —
Mangoes, per doz.	9 0-19 0
Melons (Guernsey), each	1 0-2 6
— French, Rock, each	2 0-3 0
— Valencia, per case	12 0 —
— Canteloupe, each	0 4-0 5
Nectarines (English), per doz.	3 0-12 0
Nuts, Cobnuts, per doz. lb.	2 6-3 0
— Almonds, bags	54 0 —
— Brazils, new, per cwt.	40 0-42 6
— Barcelona, bag	32 6 —
— Cocoa nuts, 100	12 0-17 0
Oranges, per case:	
— Valencia	16 0-35 0
— Navel	10 0-10 6
— Murcias, box	12 0-16 0
Peaches (English), per dozen	1 0-12 0
— French, p. box	1 0-1 6
Pears (Australian), per bundle of 3 boxes	10 0-20 0
Plums (French), p. box	1 0-1 2
Gages (French), per box	1 2-1 9
Pineapples, each	2 0-3 6
Raspberries (English), handle basket	2 0-2 6
Strawberries (English), per peck	1 9-2 6
— per lb.	0 3-0 9
— English, per handle basket	0 9-1 0

Vegetables: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Artichokes (French), per dozen	2 0-2 6
Asparagus (English), p. bundle	0 9-1 3
— Beans (French), per pad	5 0-8 0
— Broad (English), p. bushel	3 0 —
— Jersey, per lb.	0 6-0 7
— French, packet	0 3-0 4
— Home-grown, per lb.	0 6-0 8
Beetroot, bushel	1 3 1 6
Cabbages, per doz.	0 9-1 0
Cabbage Greens, bag	1 0-1 6
— red, per dozen	2 0 —
Carrots (English), dozen bunches	1 0-1 6
— French, new, per bunch	0 4-0 1 ½
Cauliflowers, per dozen	2 0 2 6
Chow Chow (Szechuan), p. dozen	3 0 —
Cucumbers, per dozen	1 6-2 6
Endive, per dozen	1 6-1 9
Horseradish, foreign, dz. bndls.	13 0 14 0
Leeks, 12 bundles	1 6 —
Lettuce (English), Cos, per score	0 1-0 6
Marrows (English), per dozen	3 0-6 0
Mint, per dozen bunches	0 9-1 0
Mushrooms (house), per lb.	0 8-10 0
— buttons, per lb.	0 10 —
— "Broilers", p. lb.	0 5-0 6
Mustard and Cress, per dozen pun.	1 0-1 6
Onions (Lisbon), case	7 6-8 0
— pickling, per bushel	2 0-2 6
— Spring, pr. dz. bunches	1 6 2 0
— Egyptian, bag	9 0-10 0
Peas (English), per bushel	2 0-3 0
— English, p. bag	3 6-6 0
Parsley, 12 bunches	1 6-2 0
— ½ bushel	1 0-1 6
Potatoes (Canary), per cwt.	8 0-9 0
Radishes (Guernsey), per dz. bunches	0 4-0 6
Rhubarb (English), natural, per dz.	1 0-1 6
Salsafy, p. dz. bndls.	3 6 —
Spinach, English, per bushel	0 9-1 0
Tomatoes:	
— Canary, per bundle	6 0-8 0
— selected, per dozen lbs.	4 9-5 0
— small selected, per dozen lbs.	4 0-4 6
Turnips (English), doz. bunches	2 0-3 0
Watercress, per doz. bunches	0 4-0 6

REMARKS.—Large quantities of Melons of good quality are arriving from Guernsey, but they are not selling freely. English Grapes and Peaches are plentiful, but the trade is very quiet for these fruits. Raspberries and Red Currants from Kent are now on the market. The first consignment for this season of Valencia Melons arrived this week. An unusual advance in the price of Onions for this season of the year is noticeable. Strawberries are plentiful and cheap. P. L., Covent Garden Market, July 10, 1907.

POTATOES.

Kents, 6s. to 8s.; Bedford's, 5s. 6d. to 6s. 6d.; Jerseys, 5s. 6d. to 6s.; St. Malos, 6s. to 6s. 6d.; Teneriffe, 8s. to 9s.; old Potatoes, 6s. 6d. to 7s. The market has now a good supply of English Potatoes, and these are meeting with a brisk demand. A. B., Covent Garden, July 10, 1907.

COVENT GARDEN FLOWER MARKET.

Business in pot plants is now falling off considerably. Good Mignonette is not plentiful, and Rhodanthe is over with most growers. Other plants almost finished for the season are Ericas, Boronias, and Saxifraga pyramidalis. Hydrangea Hortensia, with blue flowers, make the best prices. H. paniculata grandiflora is marketed in fine condition. Plants of H. H. Mariesi are also seen. Zonal Pelargoniums are plentiful in well-flowered plants. Some growers have finished with the Ivy-leaved varieties, and other stocks are very low. Show varieties are plentiful and good. Yellow Calceolarias are to be found in fine condition. Hybrid varieties of Crassulas are getting past their best, but C. coccinea is still good. Tuberous-rooting Begonias are plentiful; those in 48 and in 60 pots are equally good. Fuchsias, Marguerites (both yellow and white), Heliotropes, Harrison's Musk, and Lobelias are prominent plants in the market. The double-flowered blue Lobelia sell well when marketed in small plants, but plants in 48's have a slow trade. This is not surprising, as a demand for new plants does not exist until their merits have been proved, and buyers are loath to purchase plants except such as are well known.

CUT FLOWERS.

Hardy flowers are prominent at the present time, and they are more appreciated than they were some few years ago. Coreopsis grandiflora is a favourite subject and lasts fresh for a long time. Gypsophila is over plentiful. In choice flowers Liliun longiflorum may advance in price. Good blooms of L. lancifolium album were making 2s. 6d. per bunch this morning. Lily of the Valley is not abundant. Callas are seen; there is little demand for them. Some very fine varieties of English Irises are seen. Spanish Irises are still plentiful, also Gladioli in some of the best varieties of the Colville and Brenchleyensis types. A. H., Covent Garden, Wednesday, July 10, 1907.

ANSWERS TO CORRESPONDENTS.

ASTER: E. W. L. The stem has been hollowed out by some mining maggot that entered the plant at a point below the soil level.

BEST TIME TO PRUNE CERTAIN KINDS OF SHRUBS: E. B. Hollies, Yews and Box are best pruned in July. Laurels should be cut back early in spring before growth commences. It is always best to choose dull weather for carrying out pruning operations.

CUCUMBERS DISEASED: W. X. The plants are attacked by the fungus Cercospora melonis, which is generally favoured by the presence of too much moisture in the atmosphere, too free use of manure, and a deficiency of ventilation. Spray every portion of the soil in the house with the Bordeaux mixture once each week. Plants at present free from the disease should be sprayed with sulphide of potassium, 2oz. in three gallons of water, in which 2oz. of soft soap is dissolved. Infection can take place on the under surfaces of the leaves only, hence the fungicide should be well applied from below upwards. Use this solution every other day instead of water for the ordinary syringing. When this crop is finished thoroughly sterilise all parts of the house by drenching with Bordeaux mixture, and treat the soil with gas lime at least two months before it is placed in the house.

FLOWERING OF DASYLIRION ACROTRICHUM: Enquirer. Your plant should be treated as an ordinary greenhouse subject during spring and summer, when growth is taking place. During late autumn and winter less water will be needed at the roots and less moisture in the atmosphere, as it is only necessary at those periods to keep the plants from shrivelling. The production of such a strong inflorescence will entail a great strain on your plant, and you might therefore afford weak manure-water to the roots once each week. The flowers are small and dioecious, therefore no seeds can be expected.

GRAPES DISEASED: W. D. See answer to R. G. M. in our last issue, p. 20.

INSECTS ATTACKING BRUSSELS SPROUTS: W. H. The pests you send belong to the family of Turnip flies or flea-beetles (Phyllotreta). They lay their eggs on the leaves of the plants, and the grubs hatch later and mine in the tissue of the leaves, feeding upon the softer parts. These give rise to the small, jumping beetles, which also feed upon the same plants. These insects have been unusually abundant this year, though it is said that they do not injure crops—Turnips, Radishes, Cabbages, &c., in wet seasons! The beetles may be caught by gently tapping the infected plants over a freshly-tarred tray, board, or tightly-stretched canvas. The pests should be hunted at least twice a week until the plants have outgrown the attack. Soot placed about the plants is said to act as an excellent deterrent. If the land is poor in plant food, give it a dressing of artificial manure.

MELON: Banffshire. The stems are killed by the fungus—Hypocynus cucumeris. Spray the remaining plants with a solution of sulphide of potassium, employing ½ oz. of potassium in one gallon of water. Sprinkle the soil with crushed sulphate of potash, using 1 oz. of potash to the square yard.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. Correspondents not answered in one issue are requested to be so good as to consult the following numbers. PLANTS; J. M. L. 1, Sempervivum arboreum variegatum; 2, Begonia (garden Hybrid); 3, Abutilon Savitzianum; 4, Abutilon megapotamicum var. variegatum; 5, Selaginella caulescens; 6, Acalypha marginata; 7, Rhododendron hirsutum; 8, Berberis empetrifolia.

—J. M. Raphiolepis ovata.—Studdley Castle. Clytostoma notophyllum (Bur. et K. Schum). —J. H. C. 1, Aerides virens; 2, Eria acervata; 3, Epidendrum cochleatum.—R. D. Cyrtopodium pubescens.—T. L. A. 1, Aerides japonicum; 2, Bulbophyllum Careyianum; 3, Cirrhopetalum Mysorense; 4, Stelis ophioglossoides.—E. L. 1, Santolina incana; 2, Clematis integrifolia; 3, Habrothamnus (Cestrum) elegans; 4, Buddleia globosa; 5, Spiraea filipendula flore pleno; 6, Send when in flower.—V. A. 1, Cattleya Forbesii; 2, Lælia Dayana; 3, Oncidium flexuosum; 4, Pleurothallis obovata; 5, Masdevallia simula; 6, Brassia verucosa.—E. N. Oncidium crispum. A very good variety.—G. E. W. Doronicum caucasicum.—M. K. 1, Alströmmeria aurantiaca; 2, Spiraea Douglasii; 3, Lonicera Ledebouri; 4, Spiraea callosa Anthony Waterer; 5 and 6, S. arizifolia.—J. S. Muscari comosum.—H. A. P. The Melon Pear or Pepino, sometimes called also Melon Shrub, is one of the edible Solanums, S. muricatum.

PEACH LEAVES: T. C. R. There is no disease present, the roots have got into some unsuitable material and will require to be lifted in autumn and replanted.—W. R. C. The Shot-hole fungus (Cercospora Circumscissa) is present on both Peach and Vine leaves. Spray with a rose-red solution of permanganate of potash.

ROSE: V. C. S. The injury is caused by aphides or plant-lice. Spray the bushes with a soft-soap wash, dissolving 1 lb. of soap in 10 gallons of water. This wash is most effective when used on the first appearance of the pest.

SEEDLING BORDER PINKS: Castle House. The flowers you send are of large size, and the petals are pure white; but we should not consider them superior to white varieties already in commerce.

SOIL AND MANURE ANALYSIS: G. S. L. Before undertaking this work it is essential you should possess a good knowledge of chemistry, and have access to a complete chemical laboratory. You will find much information on the subject in A Treatise on Manures, by A. B. Griffiths, price 7s. 9d.; and The Soil, by A. D. Hall, price 3s. 10d. Both these works can be obtained from our publishing department.

VINE LEAVES: S. Poplewell & W. H. The warts on the leaves indicate that there is too much moisture in the air. Better ventilation early in the day will put matters right.—A. B. There is no fungus or other disease present in the leaves. The injury has been caused by the sun's rays shining directly on the foliage, at a time when the leaves were partly covered with moisture. Employ a little ventilation early in the morning that the foliage may become dry before the sun's rays have become powerful.

COMMUNICATIONS RECEIVED.—Col. Beddome—W. H. —J. C. & Sons—J. C. T.—W. W. C.—S. A. S.—W. T., Paris—M. L.—W. G.—H. M.—E. M.—A. G. L.—C. R.—Peach—W. T.—F. P.—R.—de B. C.—W. H. L.—A. P.—T. S.—F. M. W.—J. D. G.—Rev. H.—C. S. D. & Son.



THE

Gardeners' Chronicle

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HORTICULTURE IN EGYPT.

HORTICULTURE has been practised in Egypt for some thousands of years, but no remains of these ancient gardens exist, and all the gardens of any note now existing in that country are the work of Europeans.

Mohammed Aly Pacha and his son Ibrahim, in the first half of the nineteenth century, brought gardeners from England and France to lay out the gardens on the Isle of Roda at Cairo, and these became famous both for their beauty and for the collection of trees. Later, Ismail Pacha, Khedive of Egypt, employed European gardeners and spent large sums of money in constructing extensive parks around his palaces at Giza and Gezireh. The public gardens of the Esbekieh, and most of the trees now growing in the streets and suburban roads of Cairo, were also planted under this ruler's direction. Rich Europeans and natives followed his example, so that many of the best Egyptian gardens of to-day date from the reign of Ismail Pacha. Since the time of the

occupation of the country by the British, the Government has been unable to attend to any matters other than those which are capable of providing revenue, and this may be also said of many private persons who before had taken an interest in horticulture, so that, speaking generally, gardens in Egypt have during the last twenty-six years been greatly neglected. During the recent boom in land speculation, numbers of estates were sold and parcelled out for building purposes. Of the beautiful gardens on the Isle of Roda little remains excepting a few trees, which, by chance, were not in the way of the road-makers and builders, whilst at Giza and Gezireh the only remnants are the Zoological and Palace Hotel gardens. One, however, still finds beautiful but solitary specimens of exotic trees which tell their own tale of the past. At the present time interest in horticulture is again growing, and almost all the European residents living outside the towns have their own gardens.

Native gardeners are employed chiefly, although a few of the wealthier proprietors have brought men from Europe. At Alexandria there is a thriving horticultural society, which is subsidised by the Government, and this association numbers amongst its members the best horticulturists and botanists in Egypt. Mr. David Fish, late of the Royal Botanic Gardens at Edinburgh, is the secretary. An experimental station has been established; seeds are being distributed, and exhibitions, which would do credit to any society in England, are held twice each year. The Khedivial Horticultural Society at Cairo is now being reorganised under the name of la Société d'Horticulture Commerciale.

Commercial horticulture in Egypt has undoubtedly a great future before it. A considerable and profitable trade is done in cut flowers, but it is mostly in the hands of small growers who give little or no attention to improving the quality of the produce which they offer for sale. Roses, which may be said to grow like weeds, are by far the commonest market flowers. Good blooms sold at Cairo last Christmas for a shilling each. Violets and Chrysanthemums are also largely grown for supplying cut flowers, but Chrysanthemum flowers seldom compare favourably with those one sees in the florists' shops of Europe and America.

Owing to the increasing number of people who spend the winter months in Egypt, the florists' business must in time become an important industry. The nursery trade is also capable of great development, and at present a demand exists for ornamental trees and shrubs, as well as for trees for the production of firewood, telegraph poles, &c. With few exceptions the nurserymen content themselves with the propagation of those kinds which are already common in the country, and even for these the demand is greater than the supply, but there are hundreds of beautiful and useful plants which only need introducing to become popular.

The subjects now grown are natives of varied climes; trees from the Northern States of America may be seen growing side by side with others from Brazil and India. Many species of Palms will grow in the open air in Egypt, and plans are in preparation for the propagation, on a large scale,

of these and other foliage plants for export to European markets. Plants grown in the open air are much harder than those grown in hothouses, and there appears little doubt of the success of the enterprise, especially as the cost will be small. Another branch of commercial horticulture in which great developments may be expected in the near future is the cultivation of fruit and vegetables for export. Hitherto cotton and other purely agricultural crops have occupied the attention of cultivators, to the exclusion of what have been regarded as garden crops.

As the production of cotton is increasing in other countries, people in Egypt are asking themselves whether they are wise in relying so fully on this crop. Many growers have probably been deterred from fruit growing by knowing that they must wait three, four, or six years before receiving any returns from the trees, but they ignore the fact that vegetable crops may be grown between the trees almost up to the time they begin to fruit.

The profits derived from the cultivation of vegetables and fruits have in several cases far exceeded those derived from agricultural crops.

BANANAS.

Growers of Bananas rarely realise less than £60 clear profit per year per feddan (a little over an acre), and from one plantation of 25 feddans in the province of Galoubieh, the owner has this year made a profit of over £2,000. Many Bananas are yearly imported into Egypt, so that for home consumption alone there is already a market, but a local market alone would not be sufficient to warrant the institution of a Banana industry. Egypt, however, is more favourably situated than any other country for a Banana trade in the Mediterranean, Adriatic, and Black Sea ports. As compared with the Canary Islands, the cost of transport from Egypt is in most cases less than half. The export trade of Alexandria and Port Said is served by numerous lines of fast and up-to-date boats, which daily leave those ports for all parts of the world. The Chinese Banana, which fetches the highest price in the European markets, thrives exceedingly well in Egypt, and bears crops equal in weight to any produced in the West Indies or Canary Isles. Clumps planted 10 feet apart annually produce 4 bunches of fruits containing from 8 to 10 hands each. Banana cultivation was considerably checked a few years ago by the appearance in the plantations around Alexandria of an eel-worm which attacks the roots of the plants. Fortunately this trouble has since almost disappeared, and it will probably give little further trouble if a systematic course of transplanting is followed.

ORANGES AND LEMONS.

The cultivation of Oranges and Lemons is also capable of great development in Egypt, although for various reasons it will probably be slower than in the case of Bananas. All the best varieties of Oranges are grown to some extent, including the Jaffa, Blood Orange, Mandarin, and Washington Navel, or seedless Orange. Lemons and ordinary sweet Oranges of excellent quality are grown everywhere. Experimental shipments sent to England have been most favourably reported upon and have brought excellent

prices. As in the case of almost all other kinds of fruits, the Orange supply is not sufficient to meet the local demand, and large quantities are imported yearly from Italy, Syria, and elsewhere. Properly managed Orange plantations in Egypt yield a margin of £20 per year per feddan, after rent, water-tax, and all working expenses are paid. As a rule, however, the methods of cultivation followed admit of great improvement. The majority of the trees have been raised from seeds, but the Citron, (*Citrus medica*), where grafting has been practised, has been largely used as a stock instead of the Sour Orange. In the month of March cuttings of the Citron are made about 9 inches long, and two buds of the variety to be propagated are inserted in the upper half of each cutting, which is then inserted in ordinary soil, care being taken that the buds face to the north and south. About 50 per cent. of the cuttings thus planted form roots so that it is a quick and easy method of propagation. But such trees are short-lived; they have a bad straggling habit, and produce fewer fruits of poorer quality than those grown on stocks of the Sour Orange. During the last ten years the Citrus scale (*Lepidium asperidium*), has spread largely in the Orange plantations and has done much harm to the trees. Although in other countries it has been found a fairly easy matter to keep this pest under by spraying,

Hort. bog., 39; Fl. bot. Zeit., 1842, Beibl. II. 1; Miq. Fl. Ind. Bat. III., 646; and gives as synonymous *B. Reinwardtii* Rchb. f. in Walp. Ann. VI., 246; *B. galbinum*, Ridley in Journ. Linn. Soc. xxxii., 267. *Ephippium uniflorum*, Blume Bijdr. 309 (the earliest reference); *Cirrhopteratum compressum*, Lindl.; *Sarcopodium Reinwardtii* Lindl. Fol. Or.; *Phyllorchis uniflorus*, O.K., and *Phyllorchis Reinwardtii*, O.K. Dissimilarity between even the few specimens available was remarked by Lindley, for in *Folia Orchidacea*, under *Sarcopodium Reinwardtii*, he remarks: "There are two varieties known to me, one with leaves 8½ inches by 3½ inches—*Reinwardt*; the other with leaves 6½ inches by 1½ of an inch, and thinner—*T. Lobb*. Flowers greenish, 1½ inch from tip to tip of sepals. Column, column-foot, and lip crimson." Those remarks apply to the plant and not the flowers. But with the flowering of the *Bulbophyllum galbinum* here illustrated, there is evidence that there are specific differences in at least two of the plants enumerated as one species.

For the present the question of the identity of *Bulbophyllum Reinwardtii* with the *Bulbophyllum uniflorum* of Hassk., and with the other synonyms cited may remain, for the earliest references are so brief that they help but little.

The real question which concerns us is the

The case of the *Bulbophyllum uniflorum* is still farther complicated by the name being used for another species by Griff. Notul. III.; *Sestochilus uniflorus*, Orch. Java. t. 3; and *Sarcopodium uniflorum* figured in *Revue Horticole*, 1866, p. 152, and which is also at Tring Park with others of the *Bulbophyllum Lobbii* section. Drawings are being prepared of each as it flowers, and already the differences shown are too great to reconcile with the opinion they are all of one species. J. O'B.

ODONTOGLOSSUM ASTARTE.

(*O. HARRYANUM* ♀ × *O. TRIPUDIANS* ♂.)

THIS may be considered one of the least showy of the great *O. Harryanum* family, but it is not always easy to see what future plants of the same cross may be; its lip, at least, is a fine feature.

A small plant, blooming with only two flowers for the first time, does not fully indicate its final development. I raised it more for experiment to see what parallel influence would be seen upon *O. crispum* and *O. Harryanum* by crossing with *O. tripudians* as the pollen parent. It has appeared in the lip in a decided manner, as it does in the lips of all forms of *O. × bellatulum*.

The sepals are brown, this colour being only broken by two bars of yellow that do not extend to the edges, and by the tips, which are also yellow.

The petals are similarly coloured with the addition of some violet-purple, shaded into the basal marks. The lip has a white ground, but the lower two-thirds portion is heavily spotted with deep lilac, the yellow around the crest being almost suppressed by it; the apex is white, with a somewhat widened blade, as in *O. tripudians*. The central keels are elongated much more than is usual in *O. Harryanum* hybrids, from the influence of the similar character in the male parent.

The column is cream-white, with very small lacerate wings, slightly marked with brown.

In form it is somewhat poor, the segments being rather narrow and the petals standing forward at an angle of 35° to the plane of the flower. De B. Crawshaw.

ODONTOGLOSSUM ASTRÆA.

(*O. × FASCINATOR* (NAT. HYB.) ♀ × *WATTIANUM* CRAWSHAYANUM ♂.)

THIS hybrid also has inferior form, but its colour scheme is most pleasing.

The greater influence in respect of colour comes from the female parent; but in form the flower is more like *O. Lindleyanum*, the female parent once removed. I expected this, therefore am not disappointed, for it proves what I have often stated, viz., that reversion to ancestors will be in relation to the individual strength of those ancestors to impart their characters upon their descendants.

To explain these details without the aid of photographs or paintings, I must state that the ground colour of the *O. × Fascinator* I used was creamy-yellow, with some rose in it; it was very lightly spotted in both the sepals and petals two-thirds distance from their bases, and also had a group of "punctatum" spots in their lower areas. In form it was ordinary.

The ground colour of the *O. Wattianum* was yellow, copiously spotted with brown, its lip being also yellow, with a heavy brown blotch under the crest.

This new hybrid, of which I have as yet only bloomed one plant, may show as great an improvement in the future as in the case of the male parent. The sepals are greenish-yellow, with a little rose suffusion, containing one brown blotch at two-thirds distance from the base, also a broken line of spots around the margins, and an incipient inferior bar made up of a few spots.

The petals are of a pleasing shade of rosy-yellow, with a smaller blotch placed as in the



FIG. 14.—*BULBOPHYLLUM GALBINUM*: FLOWERS YELLOW WITH REDDISH LINES AND CRIMSON SPOTS.

nothing has yet been done in Egypt to prevent its ravages. The Government, through the agency of the various horticultural societies, is now devoting attention to this matter, so that something may be done in the near future to minimise this evil. T. W. B.

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

BULBOPHYLLUM GALBINUM, RIDLEY.

THE illustration at fig. 14 has been prepared from a specimen which flowered recently in the garden of the Right Hon. Lord Rothschild, Tring Park, Tring (gr. Mr. A. Dye), the plant having been obtained by the Hon. Walter Rothschild as *Bulbophyllum Reinwardtii* Rchb. f. The flowering of this interesting plant seems to solve one important question relating to this group of *Bulbophyllums*, and opens up other interesting matters, which for want of original material, cannot so easily be solved. J. J. Smith, in his clever and useful work *Die Orchideen von Java*, refers both *B. galbinum* and *B. Reinwardtii* to *Bulbophyllum uniflorum*, Hassk., Cat.

relation of *B. galbinum* to *B. Reinwardtii*, and reference to the material in the Kew Herbarium, in which there are both Lindley's original specimen and the drawing of *B. Reinwardtii*, and authentic material of Ridley's *B. galbinum*, indicates tolerably clearly that those two at least are distinct species, and such is the opinion of Mr. R. A. Rolfe, who has carefully examined the material. Lindley's specimen of *B. Reinwardtii* has a much narrower labellum than the *B. galbinum* here illustrated, and a greener ground colour to the sepals and petals.

The *B. Reinwardtii* for which Sir Trevor Lawrence, Bart., obtained an Award of Merit at the Royal Horticultural Society on May 9, 1905, and of which there is a drawing in the Society's collection, is probably the true plant, the length in proportion to the breadth of the labellum compared with *B. galbinum* being very marked. The growth of the plant is similar to *B. Ericssonii*, the narrow, compressed, dark-green pseudobulbs bearing ovate oblong leaves on short, stout stalks. The flowers are light honey-yellow, with slight reddish lines on the sepals and petals, and crimson spots on the bases of the lateral sepals, lip and column. One flower represents the lip down, the other has it tilted upwards.

The plant is Malayan, but the exact locality in which it was collected is not known.

TREES AND SHRUBS.

CÆSALPINIA JAPONICA.

THE warm summer experienced last year evidently suited the requirements of this shrub, for it has flowered very freely this season. Introduced from Japan by Messrs. Jas. Veitch &

sufficiently hardy to endure the winters of this country. Left to itself, it forms a loose, spreading shrub, needing a trellis or wall for its support. The stems and branches, armed with stout, recurved prickles, are clothed with bright, green, feathery foliage, composed of bi-pinnate leaves, and the foliage provides a pleasing setting to the yellow flowers. These are produced in erect racemes, about a foot in length, each



FIG. 15.—CÆSALPINIA JAPONICA: FLOWERS YELLOW, HALF NATURAL SIZE; DETACHED FLOWER REAL SIZE.

The column is almost like that of *O. Lindleyanum*.

The seed pod was produced by using *O. Wattianum* Crawshayanum when it bloomed for the second time in 1901, and had not then acquired the great development which it showed when it bloomed in 1903 and was awarded A.M. R.H.S. on May 19. *De B. Crawshay*.

Sons, it flowered with them for the first time in 1887, but it does not seem to be a very well-known plant, although several nurserymen have exhibited cut sprays in their groups this season. The genus *Cæsalpinia*, which commemorates the name of the Italian botanist Andreas Cæsalpinus, is essentially tropical, and of about 50 species known, *C. japonica* is the only one

bearing from 20 to 30 blooms. Each flower is about an inch in diameter; the petals are a rich, canary shade of yellow, which contrasts well with the crimson of the filaments and anthers.

A plant in the Coombe Wood Nursery is growing in gravelly clay soil, and the shoots are supported on a trellis. At Kew the plant is afforded the protection of a wall. *H. Spencer*.

LIBOCEDRUS MACROLEPIS.

A young specimen of this Conifer planted at Pencarrow last autumn and partially protected, has survived the severe cold of the past winter, and is now growing freely. The young growths have a healthy, bronzy tint, but generally the tree looks soft and sappy, and one would hesitate before pronouncing it perfectly hardy. It is a coniferous tree of a distinct character, and it should be established in this country if possible. The past winter was an exceptionally severe one—as much as 18° of frost was registered on one occasion here—and such trying conditions may not again be experienced for some years to come, and the trees may then be established and better able to withstand cold.

ESCALLONIA RUBRA.

ESCALLONIA macrantha is extremely common in seaside gardens in the West of England, where, no matter whether it is planted in good loam or left to battle for itself on the top of a stone hedge, it flourishes well. The smaller and less showy species, *E. rubra*, is very rare. It is just as accommodating as its congener in the matter of soil, and is even more free in flowering, the season of which extends from July until late in autumn. As the specific name indicates, the flowers are red in colour, and seen from a short distance the plant much resembles a broad bush of *Fuchsia gracilis*. It has an additional recommendation in that it thrives well under the shade and drip of deciduous trees. I have never seen the flowers

colour and sickly in appearance, and the severe weather of last winter practically killed it, for it was cut down to the ground and only one tiny branch retains any life. In its habit and superficial appearance it has practically nothing in common with the rest of the members of the genus. A well-grown specimen would have value and interest in a large conservatory. A solitary example of *Agathis australis* (*Dammara australis*) struggled hard for existence at Menabilly, but the result was far from encouraging. *A. C. Bartlett, Pencarrow Gardens, Cornwall.*

OLEARIA MACRODONTA.

THIS plant is generally considered somewhat tender, and a sheltered position is usually recommended for its planting, but at Bagshot a speci-



FIG. 16.—GROUP OF ORNAMENTAL FOLIAGE PLANTS EXHIBITED AT THE HOLLAND HOUSE SHOW BY MESSRS. W. BULL AND SONS.
(See the report published in the issue for last week p. 34.)

I selected, as a probably suitable place for the planting, a sunny slope at a good altitude, and one that is sheltered by trees, from the prevailing winds. The soil was a loam of medium quality, and my object was to ensure that the tree should be fairly dry at the roots during the winter. I anticipated that in a moderate loam the new growths would be firm and not so susceptible to injury during the winter. An extremely healthy and well furnished specimen growing in a large pot in the temperate house, Kew, proves that this species is a suitable subject for the decoration of the cool conservatory.

of the normally white species *E. floribunda* (known in Cornwall as *E. montevidensis*) so universally rose-tinted as they are this year. The flowers attract numbers of flies, which fall victims to the clammy resinous exudation.

PODOCARPUS NAGEIA.

THIS species, the most interesting member of the genus, is, unfortunately, far too tender for planting out-of-doors except in some unusually favoured district. A small specimen in these gardens survived during two winters, and during the following summers made a fair amount of new growths, but it was pale of

men has been growing uninjured in a fully-exposed position for the past two years, and that notwithstanding 20° of frost has been registered on more than one occasion in this neighbourhood. This species forms a handsome evergreen shrub 6 feet or more in height, and affords a welcome change among hardy evergreens. Its alternately disposed leaves measure from 3 to 4 inches in length and 1½ inches in width, and they bear a strong resemblance to those of the common Holly. The margins are irregularly cleft, and appear at first sight to be armed with stout spines, but on touching them they are found to be very little harder than the remainder

of the leaf. The upper surfaces of the foliage are of a pale, shining green colour, and the undersides are covered with a silvery tomentum, which is also present to a lesser extent on the points of the young growths. These latter are of a brownish-red hue, and roughly five-angled. The white flowers appear in July, and they are borne in axillary, branching clusters, individually resembling a tiny white flower of *Cineraria stellata*. The plant is a vigorous grower, and should be given a position that is fully exposed to the sun, in order that the wood may become thoroughly ripened. This *Olearia* is easily increased from cuttings of half-ripened wood inserted in summer time in a plant-house, or from fully-ripened growths cut into 6-inch lengths, inserted out-of-doors in a sheltered spot in autumn.

ZENOBIA SPECIOSA.

Probably no plant is more neglected than this, and yet, when in bloom, it is one of the handsomest of the smaller members of the Ericaceæ. It grows about 4 feet in height, and produces graceful, drooping or upright branches that are clothed in June and August from end to end with axillary clusters of comparatively large, pure-white, bell-shaped flowers. The ovate leaves are about 2 inches in length, coarsely toothed, dull-green above, and shining beneath, a rather rare condition in hardy shrubs. The variety *pulverulenta* resembles the type, except that the under surfaces of the leaves are silvery and glaucous, which also obtains, to a certain extent, on the stems and the upper surfaces of the leaves. *Zenobias* are propagated by means of layers or seeds.

LEDUM PALUSTRE.

This has proved by far the best of the *Ledums* here, being more free-flowering and easier to cultivate than the other members of the genus. It makes a shrub 3 feet in height and as much in diameter, and is covered in May with terminal clusters of small, pure-white flowers. The ovate-lanceolate leaves are 1½ inches in length, narrow, and turned downwards at the edges. They are glabrous on the upper surface, and are covered beneath with a brown, woolly tomentum, as is also the young wood. The plant has a pleasing aromatic scent when rubbed by the hand. It is a native of the Northern Temperate Zone, and its habitat extends into the Arctic Circle. The species is easily increased by layering.

CLETHRA ALNIFOLIA.

This is a native of North America, and is an upright, deciduous shrub 5 or 6 feet in height; it will grow freely in almost any soil or situation. The leaves are from 4 inches to 5 inches in length, shining above, and serrated on the edges. The pure-white flowers are produced in July and August in upright, terminal spikes, and are very sweet-scented. The variety *tomentosa* is an improvement on the type, the leaves being distinctly woolly, and the flower-spikes larger and purer in colour. Both are readily propagated from layers or suckers. *J. Clark, Bagshot, Surrey.*

NOTICES OF BOOKS.

ROCK AND ALPINE GARDENING.*

THIS handy little volume consists of 80 pages of letterpress, with illustrations. The chapters include the following subjects: "Introduction," "Choosing the Site," "Selecting the Material for the Rockwork," "Hints on Building," "The Planting of Rockeries and Rock Gardens," "The Question of Labels," "Insect and other Pests," "Wall Gardening," &c. Upon each of these in turn some practical advice is offered, but in not a few instances much more might have been added with advantage. The chapter on "Wall Gardening," p. 26, is, we think, all too brief and incomplete for this highly interesting phase of

modern gardening, and it is not quite in accordance with general experience to say that "the large majority of plants suitable for growing in walls prefer a sunny position, and this being the case, preference would be given to one facing south." As a matter of fact, the shaded or half-shaded wall may be furnished just as readily as one with a south aspect, and the same subjects may, to a large extent, be employed in both, the chief observable difference being excess of vigour and freedom of growth where the partial shade exists. Much of the success in wall gardening depends upon the manner of structure, and the components of the wall itself.

The illustrations include views of natural Alpine scenery, and artificially constructed rock gardens in various parts of the country. Among those of the latter description, amateurs and others interested in this style of gardening will find much that is suggestive and useful, one of the best illustrations being the rock and water scene on page 29. "The Shady Nook," page 49, is also pleasing. Pages 36 to 59 are devoted to brief descriptions of some of the better-known Alpine and rock plants. The extreme brevity of the text, the collective references, in not a few instances, to species of widely-varying character and requirements are likely to cause some difficulty to amateurs. The concluding pages of the book contain lists of plants suited to special soils and positions. The work is written by a cultivator, and the information on cultural matters may be therefore depended upon, but in the preparation of a second edition, the descriptive matter might be much improved.

THE ALPINE GARDEN.

IRIS SIBIRICA "SNOW QUEEN."

THIS *Iris* does not seem much like any form of *I. sibirica* that I have seen, and I think that Mr. Mallett may have some reason for suggesting, on page 28, its possible hybrid origin. There is, as Mr. Mallett says, in the foliage a breadth and robustness which more resembles that of *I. lævigata* than that of *I. sibirica*, and the whole character of the flower brings it closer to *I. lævigata* than to any other species known to me, and much cultivated in Japan. This *Iris* is by far the finest of the white *Iris*s of the *I. sibirica* type, but it has a slight suffusion of yellow on the claw. My own plant is only a small one, but it is sufficiently large to give one a good idea of its future beauty. *S. Arnott, Sunnymead, Dumfries.*

CAMPANULA MICHAUXIOIDES.

AMONG my acquisitions of last year was a plant of the scarce *Campanula michauxioides*, a somewhat awkward name, as it might be confused with the allied *Michauxia campanuloides*. So far as its resemblance with the latter is concerned, it cannot be said that the name is inappropriate, as there is about its general appearance a considerable likeness to that plant, given generally by the looseness of the inflorescence and the form and pose of the star-like flowers. These are drooping, on slight, but rigid pedicels, and are scattered sparsely over the numerous branchlets which fork from the branches, produced from the main stem, which rises to a height of about 4 feet. The flowers are a pale shade of blue, about the size of a shilling, and are decidedly attractive. The whole aspect of the plant is distinct and attractive, although far from being showy. The leaves may be roughly said to resemble in form those of *C. Trachelium*, but are more deeply serrated. This *Campanula* was first described by Boissier, but I have not access to the work at present. I think, however, that my specimen is correctly named. One is afraid that the plant will prove to be a biennial. It came into flower here about the second week of June, and it will probably last until the end of July, the dull weather having been favourable to the prolongation of the period of bloom. *S. Arnott, Sunnymead, Dumfries.*

THE STRAWBERRY CROP.

THIS year the earliest fruits from the open were marketed during the second week in June, or nearly a week earlier than in 1906, when the first baskets of fruits were not marketed until after the middle of that month. Every year, too, the season seems to last a little longer than usual, and it appears quite reasonable to anticipate the Strawberry being in season from the beginning of June to the end of July.

The increase of early supplies of Strawberries from the Continent has seriously affected the prices of these fruits grown under glass in this country. Not many seasons ago it was possible to realise from 8s. to 10s. a pound for fairly good fruits in April, and 3s. a pound for the last of the indoor crop during the early days of June. Such prices as these can nowadays only be looked for upon those rare occasions when some sudden demand or a period of bad weather causes an unusual amount of business. It seems likely that Strawberry production under glass will not show any great increase in years to come, except, perhaps, in the case of those fruits produced in cold frames or unheated houses, which fruits, it may be stated, are the most satisfactory of all the forced crop. The superiority, indeed, of the fruit grown in unheated houses over that which is forced by fire-heat is as great as the difference in excellence between the outdoor crop and that which is grown under glass under any conditions.

The enormous increase in the demand for Strawberries—still the most popular of all summer fruits—is best illustrated by the figures with which the writer has been kindly supplied by the various railway companies whose business it is to deal with these huge consignments. Taking the foreign crop first, and this comes chiefly from France; in 1906 no fewer than 1,416 tons of fruit were brought by the Great Western Railway Company to London in the spring and early summer of that year. These quantities are so remarkable that one felt obliged to enquire whether they applied to Strawberries alone, or whether they included other products. But it was found that these figures related almost entirely to Strawberries, and that although a few consignments of early culinary Peas were included in the total, these vegetables form only a very small proportion. So large, indeed, has the Continental traffic in Strawberries latterly become, that the growers now find it worth their while to charter special steamers for the conveyance of their fruits from Brest to Plymouth.

Coming nearer home, the Strawberry traffic from the West of England supplies some equally large figures. The industry is pursued chiefly in the districts of Saltash and Tavistock, and from these two places the Great Western Railway Co. carried last season no fewer than 428 tons of produce, of which the bulk was Strawberries. These figures, although they concern two districts only, are particularly striking, because they do not refer to the main crop, in the market interpretation of the term, but only to the early crop, which pays to send all the way to London.

Before leaving the subject of Strawberry production in the West of England it may be permissible to add a few words regarding the packing and proper marketing of the berries—questions to which the English grower has never given such careful attention as the subjects warrant. But this year there is a marked improvement in the appearance of the fruits on their arrival in the market, and certainly none has arrived in better condition than the Cornish berries that are put up in half-pound chip punnets, the latter being firmly packed in layers one above the other in light cases containing from two to four dozen baskets. There is still, however, much room for improvement in these matters, and the sooner that the British grower learns that it is a mistake to pack as much as 12 lbs. of immediately perishable fruit in a

* "Rock and Alpine Gardening," by H. Hemsley, published by J. Cheal & Sons. Price 8s. 6d.

single basket, the better will it be for his pocket. The Kent "peck" basket, containing 12 lbs. of fruit, is quite unsuited for the transit of Strawberries, and there can be no doubt that the Hampshire gallon handle-basket is quite the largest that it is advisable to use. Those who wish to learn how Strawberries should be packed in bulk should inspect the French fruits sent over here in crates, in which flat baskets containing about 2 lbs. of fruit apiece are packed in a single layer. The fruits arrive in London after their long journey in the very finest condition, and have the appearance of having recently been picked.

Even more astonishing than the figures of the

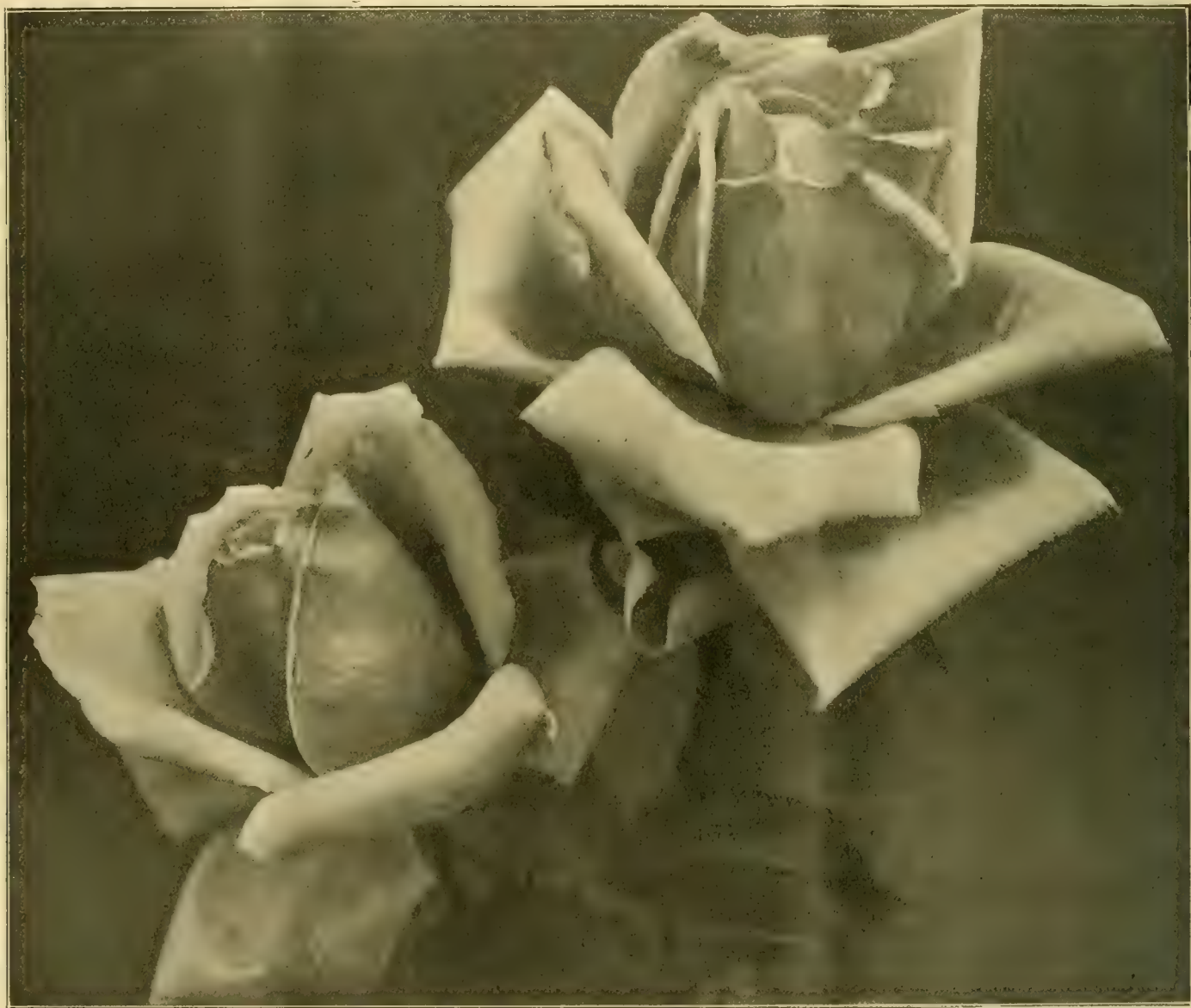
half this enormous total, and the rest goes to Liverpool, Manchester, Birmingham, Newcastle, Glasgow and Edinburgh in through carriages to its destination.

As is only to be expected under the circumstances, the railway company has made a special study of the business, and has built vans on the most approved principles for the carriage of these fruits. The baskets stand on shelves side by side, and, having handles, they cannot be stood one upon the other and thus damage the fruits. At times of great pressure old passenger carriages, fitted with movable shelves, are utilised. Between 60 and 70 thousand baskets do not constitute an unusual daily consignment,

thing for a child to fill 30 or 40 baskets in the day.

Kent contributes largely to the Strawberry supply of Great Britain, but actual statistics are not available.

This year's Strawberry crop has been a good one, but the berries have suffered greatly from want of sunshine, and frequent showers have interfered with picking operations. Prices have been about average; the earliest and the best of the fruits fetched 1s. a pound wholesale, but they dropped in value day by day until their value became fairly stationary at from 3d. to 4d. per pound. The smaller fruits, towards the end of the season, are not worth more than about 2d. or 2½d. per pound, and when these prices



[Photograph by J. Gregory.]

FIG. 17.—HYBRID TEA ROSE JOSEPH LOWE, WHICH OBTAINED THE R.H.S. AWARD OF MERIT AT THE HOLLAND HOUSE SHOW WHEN EXHIBITED BY MESSRS. LOWE AND SHAWYER: COLOUR A SHADE OF PINK. (See report on p. 36 in last week's issue.)

Strawberry traffic from the Continent and the West of England are those which have been supplied by the London and South Western Railway Co. concerning the average amount of these fruits handled annually by them in the Southampton district. Every season from the neighbourhood of Swanwick, Wickham, Fareham, Sarisbury, Bursledon, Sholing, Netley, &c., it is necessary to run six or eight special trains each day to convey the fruits to London and large towns in the Midlands and North of England. An average season's picking amounts to some 3,500 tons, represented by about 1,500,000 gallon baskets. London takes about

this total representing between 300 and 350 van-loads of Strawberries.

At the present time there are about 150 Strawberry growers in the Southampton district, and the varieties chiefly grown are Royal Sovereign, Sir Joseph Paxton and Laxton's Noble. The persons who gather the fruits earn much money during the three weeks or more that the crop lasts, and many of them can make from 10s. to 15s. a day when the crop is a good one, and they are paid at the rate of 1½d. per basket. They work from early morning till about 2 p.m., and then, after an hour or two's rest, they resume picking until dusk. It is no unusual

rule, the growers place the fruits into tubs and sell them for jam making.

Marvellous as the development of the Strawberry-growing industry has been of late years, it must not be supposed that fortunes are being made. It is essentially a speculative undertaking from start to finish, and the crop is an expensive one to cultivate and to market. With all its difficulties, however, those who carry it out thoroughly make a good living out of it, and will continue to do so as long as they cultivate improved sorts and attend to the all-important matters of careful grading and packing. *East Sussex.*

THE USES OF LIME.*

(Concluded from page 24.)

THE INFLUENCE OF MANURES ON LIME IN THE SOIL.

The various classes of manures used in farming have some bearing upon the rate at which lime is washed out, and this question has been investigated at Rothamsted. The results of the investigations may be given briefly as follow:—

- (1) Superphosphate, sulphate of potash, kainit, and kindred manures do not increase the loss to any appreciable extent.
- (2) Farmyard manure and probably all organic manures diminish the loss of carbonate of lime.
- (3) Nitrate of soda also diminishes the loss.
- (4) Sulphate of ammonia increases the loss, removing about half its own weight of lime or nearly its own weight of chalk.

Lime sinks in the soil of grass land from purely mechanical reasons; in arable land this sinking is less marked, but the lime is subject to a greater wastage by solution in the rain-water percolating through the soil.

THE CLASSES OF LIME.

In nature lime generally occurs as carbonate of lime, in the form of chalk, limestone, marble, marl, and other substances. Perhaps one-sixth part of the rocks composing the earth's crust consists of this material.

Those materials containing lime which are of any agricultural importance may be tabulated as follow:—

1. *Bases*, capable of neutralising acids.

Quicklime, burnt lime, lime-shells, caustic lime = lime.

Slaked lime = lime and water.

Chalk, limestone, marl, old mortar, &c. = lime and carbonic acid.

Basic slag = lime and phosphoric acid (lime in excess).

2. *Neutral salts*, in which the lime is already neutralised by a strong acid. Compounds of this class occur in:—

Gypsum = lime and sulphuric acid.

Bones and mineral phosphates = lime and phosphoric acid.

3. *Acid salts*, which contain more acid than the lime can neutralise. Compounds of this class occur in:—

Superphosphate, dissolved bones = lime and phosphoric acid (phosphoric acid in excess).

Quicklime and slaked lime.—The most common form in which lime is purchased by farmers is that known as burnt lime, lime-shells, quicklime, or caustic lime. It is obtained by burning either chalk or limestone in a lime-kiln. Quicklime greedily absorbs and combines with water, forming slaked lime, while it also readily takes up carbonic acid gas from the atmosphere, forming carbonate of lime which is similar in composition to pure chalk or limestone. For this reason quicklime should be exposed as little as possible to rain and to the atmosphere, but should be applied to the land without delay.

Where coal is cheap the price of good lime at the lime-kiln averages perhaps 9s. per ton. A guarantee should be obtained that it contains not less than 85 per cent. of quicklime and not more than 4 per cent. of magnesia.

Ground lime.—This consists of burnt lime (quicklime) which has been ground to a fine powder. It should be similar in quality to quicklime, but is often impure and contains less lime than ordinary quicklime.

Ground lime is more expensive than lime-shells, owing to the cost of grinding, which may amount to 6s. per ton, while an additional 3s. must be added for sacks. A good sample therefore may cost about 18s. a ton at the lime-kiln.

Chalk.—This substance is really a soft limestone, and, when the flints are removed, is

usually a very pure form of carbonate of lime. When fairly pure it will contain about half its weight of lime.

Marls.—These are mixtures of earthy matter and carbonate of lime, but their consideration is beyond the scope of this leaflet.

Gypsum.—This compound of sulphuric acid and lime is seldom employed as a separate manure, but it forms about two-fifths of the weight of ordinary superphosphate.

Gas lime.—This form of lime is a by-product in the manufacture of coal gas, for which lime is employed as a purifying agent. It consists of slaked lime more or less saturated with compounds of sulphur; it is liable to considerable variation in composition, and often it has but little basic property left in it and so cannot take the place of lime or chalk. It contains small proportions of certain compounds of sulphur which are virulent plant poisons, this fact necessitating great care in its use. It is unprofitable to use it at considerable distances from a town, or where high railway rates prevail, as the percentage of lime present is usually small.

half a ton of sand for each ton of lime. The lime in such a heap will keep for a considerable time. Before using, the heap may be screened through a three-eighth-inch gauge locking screen. Lime thus slaked should be in a fine powdery condition, and the sand mixed with it renders the spreading a somewhat less dusty process. Lime when overslaked becomes pasty, after which even distribution in the soil is impossible. The lime may be carted to the land and distributed by hand direct from the carts, a process which must be thoroughly done. It is much better, however, when small quantities are being applied to adopt the American plan, i.e., to use a suitable manure distributor, to which old bagging should be attached at the sides and behind. This trails along the ground, insures better distribution, and prevents much of the discomfort that is otherwise caused by the blowing about of the fine lime. Glasses for the eyes and protective devices for the nostrils and mouth are also used by men who do this work.

Since lime is used for many purposes, the proper quantity to apply varies widely. Common dressings are from two to three tons of lime-



Photograph by J. Gregory.

FIG. 18.—PORTION OF MR. AMOS PERRY'S WATER GARDEN AS EXHIBED AT THE HOLLAND HOUSE SHOW. (See report in the issue for last week, p. 35.)

Basic slag.—Basic slag is a by-product in the manufacture of steel, and is very largely employed as a phosphatic manure. It usually contains about 45 per cent. of lime, and from one-third to one-half of this is probably in the caustic form. Half a ton of basic slag may therefore supply as much lime as is contained in from 2 to 4 cwt. of ground lime.

THE APPLICATION OF LIME.

The most common method of liming is to put quicklime on the land in small heaps and allow it to slake naturally, or to slake it with water from a water-cart. It may then be spread from a shovel and harrowed in at once. Lime-shells may also be slaked as is done by a mason's labourer, reducing them to a fine powder. They are spread in layers a foot deep, one above the other, each layer receiving about 6 cwt. of water per ton of lime, or rather less water if the lime is inferior. The heap is then covered with about

shells at intervals of from six to ten years. Smaller dressings of about one ton per acre once in four or five years are now becoming common. Considerably larger quantities than the above may be used in the treatment of newly-reclaimed land rich in organic matter and plant food.

Ground lime.—This is usually applied by means of a manure distributor at the rate of from 5 to 30 cwt. per acre.

Gas lime.—Owing to the presence of certain poisonous compounds already mentioned, gas lime should be carefully spread on the land six or eight weeks before ploughing. It is best applied to lea in the autumn or early winter, at the rate of from two to four tons per acre. On most soils the oat crop which follows will be considerably benefited.

Chalk.—This material is not so easily distributed as lime, and as one ton of quicklime will contain as much lime as 1½ tons of chalk, it is necessary to apply the latter in much larger quantities than the former.

* Leaflet No. 170, issued by the Board of Agriculture and Fisheries.

KEW NOTES.

RODGERSIA TABULARIS.

QUITE unlike any of the other Rodgersias, except in the form of the inflorescence, this species is a distinct and interesting plant. It is a native of Northern China and Korea, and is said to grow in dense masses among coarse vegetation close to water. It is now flowering for the first time in the rock garden at Kew, plants having been raised from seeds obtained from the Imperial Botanic Garden of St. Petersburg in 1905. The peltate leaves, which resemble those of *Saxifraga peltata* in shape, are light green in colour, and from 9 to 12 inches in diameter. They are irregularly 7-lobed and borne on petioles 18 inches to 2 feet long, covered with stiff, white hairs which have a red-brown base. These disappear, to a great extent, as the plant gets older in the season. The stems grow about 3 feet high, and bear an arching panicle of white flowers. Dried herbarium specimens show a very luxuriant growth both in size of leaves and inflorescences, so that it is evidently an acquisition for the waterside and bog garden. More in general appearance like a *Saxifraga*, it has been formerly given a place in that genus under the name of *S. tabularis*. Another species also in flower at the present time is *R. pinnata*, with its crimson stems and petioles, and panicles of bright pink flowers. This is certainly the most handsome of all the Rodgersias when well grown. It flowered for the first time in this country at Kew in July, 1902, seeds having been sent from Eastern Yunnan by Dr. Henry in 1898. Both kinds enjoy a deep, rich and moist soil, with partial shade.

CALCEOLARIA HYSSOPIFOLIA.

THE various species of South American Calceolarias are so distinct and graceful in habit, and so rich and varied in the colour of their flowers, that it is strange that they are not more often seen in cultivation. Although the present species was introduced in 1865 from Quito, where it grows on the Andes at an elevation of 10 to 11,000 feet, it is somewhat rare in gardens. Its value as a bedding plant may be judged by a small, round bed of plants at Kew just producing their cymes of rich canary-yellow flowers. Growing about a foot or more high, this species is of free-branching habit, every shoot being floriferous. The Hyssop-leaved Calceolaria is much more easy to keep through the winter than the white one, *C. alba*, as it stands well in a cold frame. Cuttings also strike freely, so that it is easy to work up a good stock. Close by is another bed of the free-flowering *C. polyrhiza*, which is a useful plant for carpeting the ground beneath plants that do not make much foliage, like *Delphinium sulphureum*.

LATHYRUS FILIFORMIS.

OF all the low-growing members of this genus *L. filiformis* is one of the most charming and free-flowering. It is of bushy habit, growing about 1 foot high, and has pinnate leaves of two pairs of narrow leaflets, and racemes of 8 or more large violet-purple flowers. It is found over a great part of Southern Europe, and is somewhat variable in habit. A form of this species shown by Mr. Prichard, of Christchurch, obtained an Award of Merit at a recent meeting of the R.H.S. under the name of *Ervum gracile*. It produces its flowers freely in the month of June, and is an excellent plant for the rock garden as well as for the border.

PENTSTEMON HETEROPHYLLUS.

APART from the beautiful strains of florists' Pentstemons, there are many charming species quite as well worth growing. One of the prettiest of all the dwarf kinds is *P. heterophyllus*, which is a native of North-western America. It is almost a sub-shrub in its general aspect, making neat little bushes 1 foot to 15 inches high, with narrow, entire leaves, and racemes of clear blue, or rose-flushed flowers. It may be planted out in warm, sheltered parts of the rock garden, where it will stand through moderate winters. For bedding-out in the open, the plants should

be grown in pots in a cold frame during the winter, and planted out early in May. They come into flower early in July, and remain in bloom for a considerable time. Seeds are freely produced, and cuttings with a heel strike readily after the flowering period is over. Somewhat earlier in flower is the beautiful *P. secundiflorus* from the same country. It grows up to 2 feet high with single stems, the upper half composed of a one-sided, many-flowered inflorescence. The flowers vary in colour from azure-blue to purple. This species seeds freely, and is best treated as a biennial.

MISCELLANEOUS SPECIES.

AMONG other interesting plants in flower are two forms of *Lilium concolor*, namely, var. *sinicum*, scarlet with black spots, and var. *parthenon* (coridion), with golden-yellow flowers, from bulbs which were recently received from Wei-hai-wei. *Saxifraga Brunoniana* is a newly introduced species of the set which includes *S. flagellaris*, from the Himalaya. It has rosettes of narrow leaves like *S. aizoides*, and yellow flowers. The chief feature, however, is the numerous, crimson, thread-like stolons, which have a charming appearance. *W. I.*

The Week's Work.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Acalypha hispida (*Sandersoniana*).—Young plants raised from cuttings inserted last spring will now be growing strongly, and if the work has not already been done, they should be re-potted without delay into the pots in which they will flower. A good turfy loam will suit them well, but if it is of a close and heavy nature some manure from a spent Mushroom-bed and some leaf-soil may be added with it. Use pots of various sizes, according to the particular purposes for which the plants are required. Large specimens in 7-inch or 8-inch pots are very effective when in bloom. For the first few months the blooms should be pinched out as soon as they are seen, as the flowers show to greater advantage when the plants have lengthened somewhat. If grown on without a check they will soon reach a height of 4 or 5 feet, these, as a rule, attracting considerable attention, where an ordinary small and starved-looking plant would be passed without notice. It is a capital plant for house decoration, standing well for some weeks if not exposed to cold draughts. When the plants are in full growth, they should be liberally supplied with water, or the leaves will soon lose that luxuriant and fresh appearance which is a sure indication of good culture. Occasional weak applications of manure-water will be of great assistance. The plants should be grown in a light position in a warm house or stove, shading them lightly during the hottest parts of the day. When the long crimson spikes are fully developed, a drier and slightly cooler atmosphere will be suitable and will render the flowers less liable to damp off. The plants are very susceptible to attacks of red spider and thrip, but must be kept free from these pests. *A. macrophylla*, *A. musaica*, and *A. Godseffiana* are all worth growing, the latter being a particularly useful plant if grown in small pots for table decoration.

Achimenes.—The main batch will now be fast approaching the flowering stage. Attend to the details of staking and tying, using small inconspicuous sticks, such as the fast-dyed green Bamboo tips. As the flowers begin to develop, reduce the atmospheric moisture and gradually admit more air, to harden the plants slightly, for removal to a cool conservatory, or for use for indoor decoration in the dwelling-house. *Achimenes* will continue to grow and bloom for a long time provided that sufficient water is given them, copious supplies being necessary for strong-growing plants in full bloom. After the flowering stage is over, they should be returned to slightly warmer conditions, and water must be afforded the roots until the tops begin to wither, when it should gradually be withheld, keeping the roots dry and not too warm all the resting season. *Achimenes* are especially suitable for cultivation in hanging baskets, giving them the same cultural conditions as I have advised for plants in pots.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Budding Roses.—The time for performing this operation must depend on the condition of the stocks and on the season; but, generally, the next fortnight will be found a suitable period. Neither the prepared bud nor the incision on the stock must be exposed to the drying influence of the air for a moment longer than is absolutely necessary, and for this reason budding is most successful when performed in the cool of the evening. The bud should be tied in position directly after insertion, but the bud itself must be left free, and the binding must not be so tight as to check the flow of the sap. In the case of standard Briars the bud should be placed as near to the main stem as is possible; with dwarf Roses the bud should be placed low on the stock and near to the ground. After three to four weeks from the budding process the tying material should be loosened. It is usual to advise the cutting back of the Briar shoot at the same time as the ligament is cut, but as the bud needs to remain dormant until the following spring, it will therefore be wise to allow the Briar shoot to remain uncut.

Water Lilies.—As the older leaves begin to turn yellow they should be removed. The stronger-growing Nymphæas should have many of their green leaves removed in order to allow the flowers to be the better displayed. In such places as they can be easily reached, the faded flowers should be removed, for their removal will assist in prolonging the flowering period. This practice is especially necessary in the case of the fragrant *Aponogeton distachyon*, for this plant seeds so freely that unless the old scapes are removed the plant soon ceases to flower. With attention to this detail, the species may be kept in flower throughout the greater part of the year.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to LORD CLINTON, Bicton, East Devon.

Early Peaches, including the varieties Amsden June, Alexander, Early Rivers, and Waterloo, are ripening in the warmer parts of the country, and will require gathering as soon as they can be parted readily from the tree. Much care must be taken not to bruise the fruits in gathering them. In order to expose the fruits to the sun, tie back any growths that are shading them, and remove a few leaves for the same purpose. Set traps of hollow pieces of Bamboo or stalks of Broad-bean for earwigs, which often spoil many fruits.

Morello Cherries are changing colour, and unless these fruits are well protected by nets, the birds will eat many of them. Although the Morello Cherry is usually planted in a cool position, such as at the foot of a north wall, they are benefited by an occasional watering, especially if it takes the form of diluted stable or cow stall drainings. As soon as sweet Cherries are harvested, examine the foliage, and, if black-fly is present, syringe the trees with extract of quassia. Apply the hose in any case, for dirt and rubbish accumulate at the back of the branches against the wall. Secure the leading shoots to the wall, and pinch any that are making a too luxuriant growth. This practice of stopping the shoots in summer is far preferable to using the knife in winter or early spring.

General remarks.—This month is always a busy one for the fruit-grower. The Strawberry beds must be examined every other day and the fruits gathered. If wet, lay them out singly in a dry, airy room. The leaves of a Lime tree that have been grown more or less in the shade, form an admirable material for packing these soft fruits in. Black Currants must be gathered within a few weeks of their ripening, or the berries will shrivel. Both Red and Black Currants should be placed in wide-mouthed bottles if intended for transit by rail, and this is also the best method of sending other soft fruits, such as the Raspberry, which, similar to the Strawberry, requires to be gathered in as dry a condition as possible. Ripe Gooseberries travel badly; only one layer of these fruits should be placed in a box. Cover the fruits with soft leaves and thin tissue paper, and complete the filling of the box with soft packing material, so that when the lid of the box is placed in position the fruits will not move.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq.,
Norwood, Alloa, Clackmannanshire.

The Vinery.—Ventilation should be very carefully applied to houses in which Muscat of Alexandria Grapes are ripening. During the present summer we have not, up to the time of writing these notes, opened the front ventilators of the Muscat house once. Unless the cold, unseasonable weather departs, keep the hot-water system in operation, but should the day promise bright, the valves should be closed in the morning. Damp the paths and the borders very lightly each morning and evening, as Muscat Grapes delight in a warm, humid, but in no wise a stagnant atmosphere, when the fruits are colouring. The presence of rust on the berries is caused by a dry, arid atmosphere, the result of too much artificial heat; but an excess of moisture will cause water to condense on the berries. This latter condition can be prevented by always allowing the top ventilator to remain open a trifle at night-time. Do not expose the bunches to the full rays of the sun, or some of the berries may become injured by scorching. A light shading material placed on the glass, or a piece of thin tissue paper pinned above the bunch, will obviate this injury.

Grape Lady Downe's.—The fruits, having commenced to colour, are now in no danger from scalding. The Vines will require a higher day temperature, and the atmosphere of the house should be kept in a more humid condition, with plenty of top ventilation both by day and by night. Examine the inside border with the soil tester, and, if it is found to be dry, give a copious watering, which should be the last for the season, unless the weather becomes warmer.

Peaches and Nectarines that are colouring should have an abundant circulation of fresh air about them both by day and by night, and syringing should be discontinued. The young growths should now be trained in position, superfluous growths removed, and also any leaves that obscure the fruit from the sun's rays. Secure the fruits by tying them according to the directions given in the Calendar for May 18th. Some persons hang a net under the trees to catch the fruits when they drop, but such fruits become more or less injured for dessert purposes, and tying is preferable. See that the inside borders are sufficiently supplied with water. Trees in the latest houses, and on which fruits are now swelling, should be occasionally supplied with manure water. Syringe the foliage on very fine afternoons, but never on dull or wet days. Discontinue syringing altogether as soon as the fruits commence to colour. If traces of red spider or mildew are seen, syringe the foliage with the mixture recommended in the Calendar for May 22. Thin the young growths, and save only those necessary for next year's fruiting.

Strawberries.—The first batch of runners which were pegged down into 3-inch pots last month should now be detached from the parent plants. Remove the pots into a cold frame, where they may remain until well rooted, after which they should be potted into their fruiting pots.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE,
Bart., Burford, Surrey.

Habenaria pusilla (militaris).—This brilliant, scarlet-flowering, terrestrial Orchid from Cochinchina is a species that deserves every attention, being extremely useful as a decorative plant, and its flowers are valuable for use in a cut state. *H. rhodocheila*, which produces bright vermilion flowers, *H. carnea*, of soft flesh colour, and *H. c. nivosus* and *H. Susannæ*, both of which are pure white, are equally worthy of extended cultivation. Growers who have hitherto failed to cultivate these Orchids satisfactorily may be encouraged by the fact that their cultivation becomes an easy matter when the needs of the plants are properly understood. At the present time the plants are growing freely, and should be housed in the East Indian house, or plant stove, where the atmosphere is hot and moist, placing them near to the roof glass in order that the stems may not become drawn and the flower spikes develop weakly. In addition to the ordinary shading, the glass immediately over

them should be stippled as advised in a former calendar, and the diffused light thus afforded is the most suitable for them. Afford the plants plenty of water at the root until such time as the flowers open, when the quantity should be gradually reduced. Thrip insects are particularly fond of these species, but may be easily kept down by vaporising the atmosphere, or by dipping the plants occasionally in some safe insecticide.

Epidendrum radicans.—The long panicles of bright orange-coloured flowers of this species are particularly adapted for furnishing vases, &c. Plants which have been in bloom for several months past should have the flower spikes removed from them, growth having already commenced. It is a plant of scant habit, and a number of stems may be planted in well-drained sphagnum-moss at the lightest end of the Cattleya-house. If they are put against a glass or brick-wall partition, the stems may easily be trained up towards the roof glass by means of cord or wires. The plant may be rapidly propagated by taking the off-shoots which appear on the old growth and flower stems and inserting them thickly in a large pot. Very soon numerous young roots will appear on the stems, and, as they increase in length, as many as possible should be guided into the sphagnum-moss. Throughout the growing season the plants should be kept moist, and be afforded frequent overhead syringings.

Epidendrum vitellinum.—This is another useful bright-flowered species, plants of which have been in bloom for a long time. When growth re-commences the plants may be re-potted if this is required. This species does not require much root-space, therefore the hanging pots, these being preferable to shallow pans, should be of a comparatively small size. Thoroughly drain the pots, and for a potting compost I have found nothing so valuable as the following mixture: good fibrous peat, leaf soil, and sphagnum-moss used in equal proportions, cutting the peat and moss up moderately small, and well mixing all the ingredients together. Pot each plant moderately firm, and surface the compost with about half an inch of chopped sphagnum-moss. Suspend the plants in a light position in the coolest part of the intermediate house, and afford them much moisture at the roots until they have completed their growth.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq.,
Cobham Park, Surrey.

Affording water and mulches.—In gardens where the soil is of a light nature it may now be necessary to apply mulches and afford waterings. Though the weather has been cold and dull, the amount of the rainfall has been rather below the average in most districts, and in the event of a spell of hot, dry weather, vegetable crops would soon suffer ill effects if they were not assisted in the manner now recommended. Peas, Runner Beans, Cauliflowers, and such crops are the first to require much attention, and the ground should be well hoed before the mulching is applied. The mulching should consist of half-rotted manure, but if this is not available, litter from the stables will have to be used instead, or even the mowing grass obtained from the lawns would make a good substitute, but this should have a sprinkling of litter thrown over it in order to make it more convenient for treading upon.

Winter vegetables.—These green crops should still be planted on the various plots of ground as they become vacant, and although the plants to be used now will be the small ones that were left from the first planting, they will have made nice sturdy specimens since the bed was thinned. If they fail to make such large plants as the earlier ones, they may "turn in" at an opportune time when such vegetables are becoming scarce. Whilst this work is proceeding, let an inspection be made of the previous plantings, that all vacancies that have occurred may be filled up. The season having been such a favourable one for the transplanting of brassicas, failures are likely to be fewer than usual.

Marrows, Gourds, and Cuscutas will require frequent waterings to keep them growing. Owing to the cold nights and winds, mildew will in some cases be appearing on Marrows and

Onions. Where this happens to be the case, it will be necessary to spray the plants overhead with sulphide of potassium (liver of sulphur) or with an approved mildew compound. Do not let the mildew spread unnecessarily before commencing to spray.

Salads.—Continue to make sowings of Cabbage and white-seeded Cos Lettuce, Radishes, Onions, etc. Towards the end of the present month and early in August the Brown Bath and black-seeded varieties of Cos Lettuce should be sown for raising plants to stand through the winter.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of the Parks and
Open Spaces in the City of Cardiff.

Park by-laws.—For the maintenance of good conduct and order among visitors, and the preservation of property in public parks, it is usual to have them governed by a special set of by-laws. Common law is, as a rule, not specific enough, and too difficult of application to be of any great assistance in dealing with many of the matters which crop up from time to time in the management of a park. To give a simple illustration, let us take the case of trespass. It would be most difficult (if not impossible) to punish a person for being inside a public park during closed hours, by a process of common law, whereas the existence of a by-law to the effect that persons are not allowed within a park during certain hours makes it easy to do so, and thereby stop trespass. In the same way common law has no power to prevent visitors in a public park from playing football or any other game they choose on the best-kept lawn or among the flower beds so long as wilful damage could not be proved against them. By-laws, however, can deal with all such matters and make it a crime to do any of these things.

Legality of by-laws.—In England before by-laws can come into force they have to be sanctioned by the Local Government Board. In Scotland I believe this power belongs to the Court of Session. For the guidance of those about to draw up park by-laws the Local Government Board supplies a model set, which is exceedingly useful for the purpose. These are capable of meeting most requirements, but there are invariably local circumstances which make certain by-laws necessary in one place which are quite inapplicable in others. It would be as absurd to make by-laws regulating bathing, boating, and skating in a park devoid of water, as it would be unwise to omit them where a large lake existed.

Framing of by-laws.—Although the work of framing by-laws naturally devolves upon a lawyer, it is the park officials themselves who are best able to draw up the subjects about which they are needed. In drawing up such a list it is well to prepare for every contingency, and to make it as hard as possible for anyone to do mischief in a park by making it easy to punish them for doing so. I had once occasion to remark to the head of one of the largest park systems in this country that for a democratic city the by-laws in force in the parks under his charge were the most drastic I had ever known. His reply put the question in the proper light, when he said that they were made in the interest of the general public and for the express purpose of protecting their property in the most efficient manner—only evil doers had any reason to fear them.

Employment of by-laws.—Although the general idea of by-laws is that they are drawn up for the use of the authorities, it is well to bear in mind the fact that once they become law they can be put in force by any ratepayer who chooses to do so. For this reason great care has to be exercised in drawing up many of the by-laws so as not to hamper the department itself in the carrying out of its duties. For instance, in prohibiting the use of firearms in a park, it is policy to make a proviso that such prohibition will not apply to servants of the corporation when destroying vermin, &c., otherwise it would, in all probability, be quite within the rights of a ratepayer to take proceedings against a corporation for destroying rabbits by shooting them. What in many instances would be wrong for the public to do is needful on the part of the corporation's servants in the proper discharge of their duty.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, JULY 20—German Gard. Soc. meet.

TUESDAY, JULY 23—

Roy. Hort. Soc. Coms. meet.
Brit. Gard. Assoc. Ex. Council meet.
Rose Sh. in Manchester Botanical Gardens.

WEDNESDAY, JULY 24—

Nat. Carnation Soc. Sh. in R.H.S. Hall, Westminster.
Cardiff and County Hort. Soc. Sh. (2 days).
Harpden Fl. Sh.

THURSDAY, JULY 25—

Roy. Ulster Agricultural Society's Exh. and Fl. Sh., Balmoral, Belfast (2 days).
Horticultural Club (annual outing).

FRIDAY, JULY 26—Roy. Bot. Soc. meet.

SATURDAY, JULY 27—Lydney Fl. Sh.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—62.6.

ACTUAL TEMPERATURES.—

LONDON.—Wednesday, July 17 (6 P.M.): Max. 73°; Min. 55.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, July 18 (10 A.M.): Bar. 30.2; Temp. 62°; Weather—Bright sunshine.

PROVINCES.—Wednesday, July 17 (6 P.M.): Max. 68°. Ireland, S.W.; Min. 62°; Lancaster.

SALES FOR THE ENSUING WEEK.

FRIDAY—

Choice imported and established Orchids in large variety. Orchids in flower and bud, at 67 & 68, Cheap-side, E.C., by Protheroe & Morris, at 12.45.

From the results of some carefully conducted experiments with about 100 varieties of Tomatos, at the Maryland Agricultural Experimental Station, it was found that the varieties tested yielded produce which varied from 2 tons to about 20 tons, or 660 bushels, of fruit per acre. The average yield of all the varieties was at the rate of 11½ tons, or 390 bushels, per acre. The best ten varieties averaged 18 tons, or 603 bushels, per acre. The results show that the greater the number of cells in a Tomato fruit, the higher is the percentage of solid fruit. In 12 varieties having in their fruits more than 80 per cent. of flesh there was an average of 10.7 cells per fruit. The varieties having between 77 and 80 per cent. of flesh had 8.4 cells per fruit, and as the percentage of flesh decreases the average number of cells also decreases.

This fact points out one way in which the Tomato can be improved. The number of cells can be increased by the selection of seed from fruits having the greatest number of cells, and thus may the solidity of the fruit be increased.

In regard to manurial applications the

results showed that potash increased the crop more than either of the other elements of plant-food, and nitrogen stood next in this respect.

On a chemical analysis of the fruits grown with different artificial manures, it was found that potash has a tendency to produce a fruit with slightly less sugar, and more malic acid. Some of the sweetest Tomatos were grown by the aid of phosphates. Nitrogen and potash, when applied together, seem to have the most marked effect on the growth of Tomatos.

The following table shows a chemical analysis of 24 samples of Tomatos, comprising fruit, vines and roots:—

	Fruit.	Haulm.	Root.
	Per cent.	Per cent.	Per cent.
Water	95.45	79.41	73.31
Dry organic matter ...	4.55	20.59	26.69
Mineral matter (ash) ...	0.42	3.72	11.72
Phosphoric acid in the ash	0.05	0.04	0.06
Potash in the ash	0.27	0.39	0.29
Lime in the ash	—	0.55	0.30
Nitrogen in organic matter	0.16	0.31	0.24

Ten tons of Tomato fruit would remove from the soil about the same quantity of nitrogen and potash as 150 bushels of Potatos, but somewhat less of phosphoric acid.

Attention is directed to those portions of the plant which seldom receive consideration, viz., the haulm and roots. When the haulm is dug into the soil, both it and the roots decompose and their manurial properties become more or less speedily and completely available for succeeding crops. [The haulm should be removed from the ground and burnt if there is any reason to suspect that the plants have been attacked by disease; otherwise the disease may be communicated to future crops.] The crop that leaves the largest amount of these materials in and upon the soil adds most to the next year's store of plant-food, and to the fertility of the land.

The proportions of haulm and roots vary with different crops, and with the same crop according to its character. The relation between the amount of roots and tops is quite a variable factor, generally, however, with any given crop the greater the produce of fruit, the greater will be the amount of haulm and roots.

In the following table is shown the amount of valuable manurial elements in haulm and roots left on one acre of land from Tomatos and Potatos:

	Haulm and Roots.	Nitrogen.	Phosphoric Acid.	Potash.
	lb.	lb.	lb.	lb.
Tomatos	8500	27	4	84
Potatos	2000	9	3	10

The Tomato is not what may be called an exhausting crop, because, by its haulm and roots, if these are returned back to the soil, they impart four times as much organic matter or humus, three times as much nitrogen, and three times as much potash, with a little more phosphoric acid, than do the vine and fibrous roots of an average crop of Potatos.

The following experiments were conducted by Dr. Bernard Dyer, at Tonbridge, to ascertain the effect of nitrogenous manures upon Tomatos. The plants were grown out in the

open and were manured with dung at the rate of 25 loads (12½ tons) per acre, together with 6 cwt. of superphosphate and 1 cwt. sulphate of potash per acre. One plot was left without any further nitrogenous manure than was comprised in the dung; the other received a dressing of 2 cwt. of nitrate of soda per acre.

The results of two years' trials were as follows:—

Manures per acre.	Annual cost of Manure per acre.	Weight of Tomatos per acre.	
		1901.	1902.
	£ s. d.	Tons. Cwts.	Tons. Cwts.
12½ tons London dung, 6 cwt. of superphosphate, and 1 cwt. sulphate of potash	6 5 0	6 0	7 16
12½ tons London dung, 6 cwt. of superphosphate, 1 cwt. of sulphate of potash, and 2 cwt. of nitrate of soda	7 7 0	6 16	8 14

For the extra outlay of 22s. spent in nitrate of soda an increase of 16 cwt. of Tomatos was obtained per acre in 1901, and an increase of 18 cwt. per acre in 1902. Reckoning the fruit at 1d. per lb., the extra gain in 1901 would represent £7 9s. per acre, and in 1902 £8 8s. per acre.

The following formula has been recommended as a manurial mixture for Tomatos:

	Quantity per half Ton.	Cost at Wholesale Prices.
		£ s. d.
Sulphate of ammonia	320 lb.	1 15 8
Superphosphate	500 lb.	0 14 8
Sulphate of potash	300 lb.	1 6 9
	10 cwt.	£3 17 1

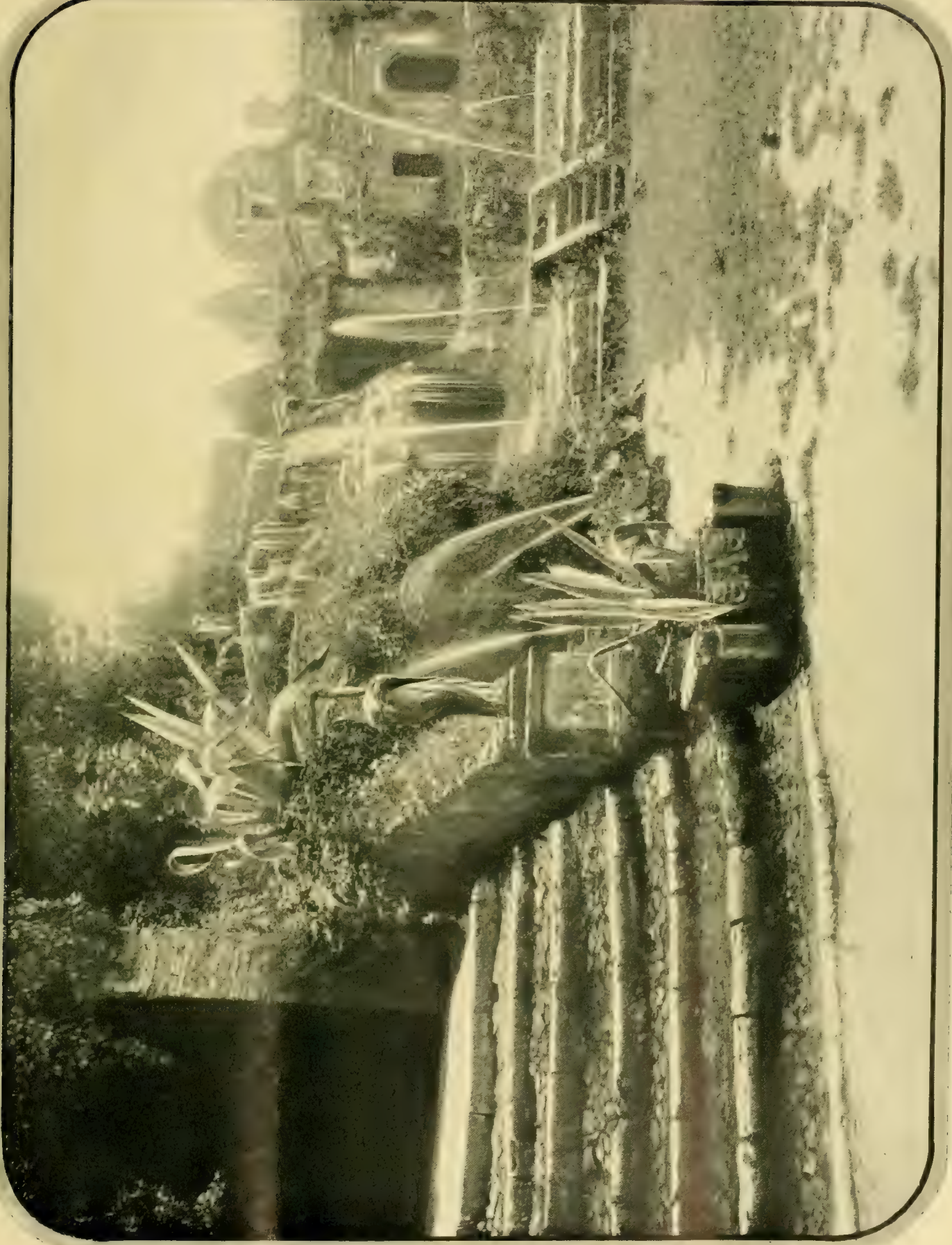
This mixture contains about:—6 per cent. of nitrogen, 7½ per cent. of phosphoric acid, and 13½ per cent. of potash. If applied at the rate of 4 cwt. per acre, this will give about 26 lb. of nitrogen, 33 lb. of phosphoric acid, and 60 lb. of potash per acre.

This manurial mixture at wholesale prices would cost about £1 10s. 9d. per acre.

For potting purposes the soil in which Tomato plants are to be grown should be well mixed with the manure in the proportion of about half a pound to a bushel of soil. After the fruit is set mix with the surface soil ½ oz. of the mixture per plant about every three weeks until the fruit is ripe.

Plants cultivated in pots indoors require more manure than Tomato plants in the open garden, owing to their restricted soil area.

OUR SUPPLEMENTARY ILLUSTRATION represents a view in one of the remarkable Italian gardens, found so numerous about the city of Rome, and in which architecture, statuary, fountains and other adornments occupy as prominent positions as the floral subjects. Many of these old gardens have been allowed to fall into decay, but in their ruined state they are interesting as showing how certain species of plants will survive and multiply under conditions of neglect. Mr. JAMES HUDSON, Gunnersbury House Gardens, Acton, who kindly sent us the photograph from which the illustration has been prepared, writes as follows:—"One of the most delightful excursions from Rome is that to Tivoli, 18 miles distant. It can be undertaken either by railway, by the steam tramway, or, if one has the time, by horse carriage. A visit to the Villa d'Este, on the west of the town, will



CASCADES, FOUNTAINS, AND AGAVES IN A ROMAN GARDEN.

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repay the traveller. Unfortunately, the Villa is not now occupied, nor, indeed, to all appearances, has it been for several years past. The views, which extend to Rome and beyond, from the terraces are magnificent, the most prominent feature in the distance being the dome of St. Peter's Cathedral. The gardens, which slope rapidly towards the north, were designed with considerable skill. Towards the west are many acres of vineyards. The most prominent shrubs are the Sweet Bay, the Olive, and the upright-growing Juniper. The latter shrub has been planted at points of vantage, and there is a noble avenue formed of it, many of the trees being from 60 to 70 feet in height. The waterfalls, cascades, and fountains are most noteworthy. Evidently the designers had in view the importance of these adjuncts to a garden attached to a summer residence in a climate which is noted for its high temperature. These water-features are boldly executed, and a large supply of water is readily attainable from the River Arno. To wander in the shady groves of these gardens when they were in their former degree of splendour must have been delightful after the heat of Rome during the summer season. The Villa itself, which was built in 1549, is said to be one of the finest examples of architecture of the Renaissance period. It now belongs to a member of the Austrian Royal family."

THE GHENT QUINQUENNIAL, 1908.—How quickly these quinquennials seem to succeed each other, becoming formidable mile-stones! The schedule of prizes to be offered at the exhibition to be held next spring is now before us, and it is even more important than previous ones have been, because this exhibition will mark the centenary of the Société Royale d'Agriculture et de Botanique de Gand. The show will be opened on April 25, and remain open until May 2. Extra pains have been taken to ensure an even finer show than any previously seen at Ghent, and to the many British horticulturists who regularly attend the famous Ghent Quinquennials, and have appreciated their magnificent features in the past, that statement will convey much. There are 760 classes, divided into 29 groups, and in each class liberal prizes are offered. For new plants there are twenty classes; Orchids are invited to fill eighty-two classes, and as some of them are for large collections, there should be a magnificent display. In the twenty-sixth group there are fifty-two classes of a more or less scientific nature, and in which the exhibits will have some bearing upon the important questions of heredity, fixity of varieties, mutation, artificial selection, adaptation to environment, morphology, and many other important subjects. In the other groups nothing seems to have been forgotten in the matter of providing classes for everything likely to be available. Many British horticulturists look forward to the Ghent Quinquennials with pleasure, for, at these shows, they can combine business with pleasure. Since the last gathering in 1903, death has removed the popular president, Comte KERCHOVE DE DENTERGHEM, and the secretary, M. E. FIERENS, whilst many who regularly visited these exhibitions from this country are now no longer with us.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the committees will take place on Tuesday, July 23. In the afternoon a lecture will be given by the Hon. VICARY GIBBS, on "Rare Trees and Shrubs in the Open Air."

PRESENTATION.—Mr. T. BLENCOWE, who has filled the office of secretary to the Kingston Gardeners' Society for the past 12 years, was presented by the members, on the 12th inst., with a watch, on his leaving the district to take up new duties at Henley-on-Thames.

FLOWERS IN SEASON.—Messrs. C. S. DANIELS & SON, Wymondham, have sent us flowers of their strain of Sweet William (*Dianthus barbatus*), which they describe as "Auricula-eyed" on account of the colouring being in a clearly-defined ring on the usual white ground. The flowers are large, and the markings are in many beautiful shades of colours, some approaching blue.

—Messrs. JAMES VEITCH & SONS, LTD., send from their Coombe Wood Nursery flowering sprays of *Magnolia macrophylla* and *Stuartia pseudo Camellia*. The former has a very large flower of pale yellow colour, set in a rosette of leaves which measure more than 2 feet in length. The plant was figured in our issue for November 3, 1900, p. 325. The species of *Stuartia* forms a remarkably handsome shrub, and bears an abundance of white flowers along the whole length of the shoots. It was figured in the *Gardeners' Chronicle* for August 18, 1888, p. 187.

THE AMERICAN GOOSEBERRY-MILDEW IN ENGLAND.—Mr. ERNEST S. SALMON writes us on this subject as follows:—"Royal assent was given on July 4 to 'The Destructive Insects and Pests Act, 1907,' and the Board of Agriculture will now be able, under this new law, to issue an Order against the American Gooseberry-mildew. I wish to point out how matters stand at this juncture, and especially to emphasise the necessity for growers to co-operate with the Board to stamp out this new pest. During the past few weeks I have visited affected Gooseberry plantations in Worcestershire, Gloucestershire, and Norfolk, and in many cases I have seen the berries, leaves, and young shoots smothered with the white, powdery masses of spores of the American Gooseberry-mildew. Experience in this country has already shown (as it has in other countries on the Continent) that severe pruning in the winter and frequent spraying during the spring and summer months do not eradicate this disease, and that the only certain way of dealing with this pest, if we wish to stamp it out before it spreads through the country, is to grub up and burn the affected bushes. Already instances have occurred of considerable losses to growers caused by this new disease. In one case a grower discovered the disease in his nursery, and it was not until he had grubbed up and burnt the whole of his nursery stock, of the value of some £70, that the danger of the disease spreading to adjacent and extensive Gooseberry plantations was removed. In another case the loss was more serious still; for in a plantation of some 14 acres not only had all the Gooseberry bushes to be destroyed, but, as I found the mildew had spread to Red Currant bushes growing intermixed with the Gooseberries, it was necessary to grub up and burn these also, in order to ensure the eradication of the disease and safeguard the surrounding unaffected plantations. The total loss in this case amounted to some hundreds of pounds. In a third case a nurseryman lost a considerable sum of money through the necessity of having to burn a large stock of recently-imported standard Gooseberries affected with the disease. It is clear that growers are just beginning to experience the spread of a disease which, unless resolutely stamped out, will gradually invade and ruin their Gooseberry plantations, just as the 'Big Bud' mite has ruined Black Currant plantations. The disease has been allowed seven years' start in Ireland and two or three years' start in England. Now that the Board have at length acquired the necessary legislative powers to deal with the disease, it behoves all growers, and gardeners generally to co-operate heartily with the Board if they wish to see the American Gooseberry-mildew destroyed and their Gooseberry plantations remain healthy. Up

to the present the outbreaks that have occurred in England are as follow:—Kent: on standard Gooseberries only in one nursery (disease believed to be now stamped out). Worcestershire: 31 outbreaks in Gooseberry plantations. Gloucestershire: one outbreak. Warwickshire: one outbreak. Wisbech and district: two outbreaks."

SALE OF BOTANICAL BOOKS.—The following are some of the more important works disposed of at a recent sale held at Messrs. CHRISTIE'S auction rooms, King Street, St. James's:—*Salicetum Woburnense, or, a Catalogue of Willows Indigenous and Foreign at Woburn Abbey*, by the Duke of BEDFORD, 2 vols., finely-coloured plates, 1829 (only 50 copies were printed), £12 10s.; *Botanical Magazine*, by WILLIAM CURTIS, complete from 1793 to 1903, £86; *Edwards's Botanical Register*, 33 vols., 1815-47, £28; *Arboretum et Fruticetum Britannicum*, by J. C. LOUDON, 400 plates, 8 vols., 1844, £2 4s.; JAMES SOWERBY'S *English Botany*, coloured plates, original edition, complete in 30 vols., 1790-1814, £14 10s.; ditto, third edition, 1863-86, £14; ROBERT SWEET'S *British Flower Garden*, £12; JOHN EVELYN'S *Silva*, with portrait by BARTOLOZZI and coloured plates, a fine copy in contemporary tree-calf extra, 1776, £12 5s.; *The Orchidaceæ of Mexico and Guatemala*, by J. BATEMAN, 1843, 40 coloured plates, £7 5s.; *Flora Danica Iconum*, over 1,000 coloured plates, 17 parts in 6 vols., bound in morocco, 1764-87, £11 10s.; JOHN GERARDE'S *Herball*, enlarged and amended by THOMAS JOHNSON, 1636, £4 6s.; *Selectarum Stirpium Americanarum Icones*, by N. J. JACQUIN, 1750, 246 coloured plates, £17; *Description of the Genus Pinus*, by AYLMER B. LAMBERT, second edition, enlarged by Professor DON, 3 vols., 1838, £68 (Quaritch); *Reichenbachia, Orchids Illustrated and Described*, 192 coloured plates, Imperial paper edition, both series, 7 vols., 1888-94, £14; JAMES SOWERBY'S *English Fungi or Mushrooms*, with supplement and index, 440 coloured plates, 1797-1803, £11; *Plantæ Asiaticæ Rariores*, by NATHANIEL WALlich, 300 coloured plates, 1830-2, £13; *Les Liliacées*, by P. J. REDOUTE, 486 coloured plates, fine copy, 1802-16, 8 vols., £90.

THE ASSOCIATION OF ECONOMIC BIOLOGISTS held its fifth general meeting in the Imperial Institute on Thursday, July 4. The President, Mr. A. E. SHIPLEY, M.A., F.R.S., occupied the chair. After the formal business, the following papers were read:—By Mr. CECIL WARBURTON, "Some Notes on Ticks." The author dealt with the classification, means of distribution, and the leading generic characters. Mr. E. R. BURDON detailed the results of his experiments with the Spruce-Gall and Larch-Blight disease. His results showed that paraffin emulsion, applied early in the year, before the buds open, and whilst the insects are still hybernating, is the most effective insecticide. Mr. WALTER E. COLLINGE gave an account of his work on the Cecidomyiidae or Gall Midges, and appealed to entomologists and others for assistance in working out the life-histories, &c., of this very difficult family of Diptera. An abstract of a paper, by Professor A. D. IMMS, on a "Disease of Bees in the Isle of Wight," was read. Mr. E. S. SALMON read a short paper on the American Gooseberry-mildew, and the proposed legislative measures to check the importation of diseased plants. Mr. C. GORDON HEWITT discussed the binomics of the Calypterate Muscudae, and their economic significance. A demonstration was given by Mr. W. G. FREEMAN, the Superintendent of the Colonial Collections at the Imperial Institute, and visits were also paid to the Research Laboratories. The next meeting will be held at Edinburgh about Easter, 1908.

AGRICULTURAL EDUCATION.—The Departmental Committee held meetings on the 10th and 11th inst. The following witnesses attended, and were examined:—Mr. E. S. BEAVEN, Warminster, Wilts; Mr. CHRISTOPHER TURNOR, representing the County Councils Association; Mr. J. A. SMITH, Eastern Counties Dairy Institute, Ipswich; Mr. T. W. COWAN and Mr. WALTER F. REID, nominated by the British Beekeepers' Association; the Right Hon. HENRY HOBHOUSE, Chairman of the Somerset County Council, nominated by the County Councils Association.

THE "CITY PRESS."—This paper having been founded by Messrs. W. H. & L. COLLINGRIDGE in 1857, has just celebrated its jubilee. It has recorded the principal details of the municipal government and social doings of the Metropolis for the past 50 years.

PRINCE OF WALES AT THE SCOTCH AGRICULTURAL SHOW.—At the conclusion of the luncheon given in honour of the visit of the PRINCE and PRINCESS on the 9th inst. to the Highland Society's Agricultural Show at Prestonfield, Mr. JOHN METHVEN, of Messrs. THOMAS METHVEN & SONS, Edinburgh, under whose direction the grounds surrounding the pavilion were laid out, was presented to the PRINCE, who expressed admiration of the manner in which the pavilion and the grounds had been arranged.

PROPAGATION OF VIOLAS.—Mr. J. F. McLEOD, Dover House Gardens, Roehampton, writes as follows:—"As an admirer of Violas, I was pleased to read (see p. 33) of Mr. HAWES's success in the massing of them in beds. I have grown Violas in these gardens since the summer of 1890, and in no year have I had any serious disappointment in their cultivation. With the exception of injury from wire-worm, my plants have not caused me any anxiety. In 1893, which season, it will be well remembered, was very hot and exceptionally dry, I had a large bed planted with Violas, and by watering them once each week and damping them overhead every evening, the plants were enabled to last throughout the season remarkably well. There is no bedding plant that so well repays for the attention given it. We do not root the cuttings in hand-lights, however; this we have never done, as it is unnecessary, and much stronger plants can be produced by a full exposure to atmospheric influences. The cuttings are put in at about the end of September or early in October in a western border against a quick-set hedge. The position is not selected from choice, but simply as a matter of convenience. Young, soft cuttings are selected when these are forthcoming, and with the exception of occasionally damping them during dry weather, nothing further is done, and, although they have had 2 to 3 inches of ice over them, they have not suffered any ill effect. We root about 98 per cent. of the cuttings put in, and being thus exposed they form stocky plants which can be lifted early in March with an abundance of healthy roots and numerous side growths. In a short time they form the class of plant from which the best flowers may be expected."

TO STUDY FRUIT TREE PESTS.—The United States Bureau of Entomology will shortly establish somewhere near San José a big experiment station to study the insect pests which afflict the deciduous fruit trees of California. A liberal appropriation has been made for the support of the station for a period of two years, and at the expiration of that time it is expected that measures will be taken to make it a permanent institution.

RUBBER IN FRENCH WEST AFRICA.—The French Government is turning its attention to the better administration of the rubber forests of French West Africa. On the whole the quality of the rubber produced continues to improve, and prices have risen all round. The rubber, however, from the Ivory Coast and the Casamance district is still inferior to that from the other colonies, and somewhat strict measures are to be taken to improve it. The shortage in the export of rubber is due to adulteration which has made Ivory Coast rubber to a certain extent unacceptable in Europe, and, secondly, less rubber has been brought across the Gold Coast frontier from Ashanti to exchange for gunpowder at Aborisso. A special survey is being made of the chief rubber-producing districts, which will eventually be divided into three categories as follows:—(1) Unexploited districts. These consist only of a few regions in the Ivory Coast forests. (2) Districts which are exploited but have not been spoiled by excessive production and unscientific methods of collection. (3) Districts which have been spoiled for the above reasons. These latter are in the majority. When the survey and classification are complete, the GOVERNOR-GENERAL will, by decree, close the worst districts to rubber collection, so as to give the plants time to recuperate. A beginning will probably be made in 1908. *Journal of the Society of Arts.*

NEEDLES OF THE COMMON SPRUCE AS A PROTECTION FOR STRAWBERRIES.—At this season, writes a correspondent, attention might be called to the use of the needles of the Spruce Fir as a protective means against slugs. The branches of this species of Fir are often employed by gardeners to prevent the too early opening of the blossoms of the Apricot and Peach, and as a protection of the young fruits from late spring frosts. When these branches are taken from the trees, they should be placed in layers on the ground, and turned over several times, and they will cast their needles entirely, which, without much trouble, answer capably for strewing over the spaces between the Strawberry plants. The slugs are careful not to trespass on ground thus treated, the needles attaching themselves to their slimy bodies and remaining thereon, ultimately causing death. Later in the summer, the needles may be dug in. There is a slight disadvantage attached to the use of this means—they stick here and there into the soft fruits, but are readily removed when gathering. Fir needles can be purchased cheaply in great quantities, or obtained for the gathering in the woods in many parts of the country.

THE CAMPHOR INDUSTRY.—Mr. JAMES G. WILSON, of the American Department of Agriculture, recently declared that the United States was successfully experimenting in the production of camphor. He said that for years past the Department has been distributing camphor tree seed, and thousands of trees are now growing throughout the South and in the Pacific Coast States. Two years ago a serious effort was made to develop the manufacture of camphor from these trees. By improvements in manufacturing processes satisfactory results have been accomplished and a large manufacturing concern is now building up a camphor grove of 2,000 acres in Florida, from which it hopes to make its camphor. This firm uses more than 500,000 dollars' worth of camphor every year. From another source we learn that the Tokyo Government has on foot a project for the extensive planting of forests of camphor trees. The demand for camphor increases, having now reached over 10,500,000 pounds annually, and it will not be long until it reaches 13,000,000 pounds, says the Japanese authority.

A NEW HORTICULTURAL JOURNAL.—A horticultural journal in the Swedish language has been started at Helsingfors for circulation in Finland. The editor is a nurseryman, having a business in that town. The name of the new-comer is *Finske Trädgårdsolare*.

TOMATOS IN CANADA.—The summers in the Toronto district, if shorter than in England, are warmer, and the Tomato is largely planted as a field crop. When Tomato seedlings, states a Canadian contemporary, are about a month old from the date of sowing the seeds, they are pricked off about 3 inches apart; and when they begin to get crowded they are again transplanted at from 5 to 8 inches apart. The soil of the beds to which they are removed is made just rich enough to support the plants, as a very rich soil would favour too rapid growth, making the plants soft, which would retard their growth after they are planted in poorer soil. The manure is spread over the fields evenly and is afterwards worked with a disc-harrow twice or thrice to cut the manure very finely. The ground is then ploughed. This is done early in the year. Subsequent tillage consists of working the soil with a cultivator, the last time being a week before planting. The plants are set out in lines drawn at 8 feet apart, putting the plants at distances of 3 feet from each other. Plenty of space is thus allowed for the sun's rays to penetrate between the plants into the soil. The line is stretched across the field, and a man goes along it with a 3-feet measuring rod furnished with a tooth at one end, and with this he marks the stations where the plants will be set. It would appear that the practice of the ordinary cultivator in Canada is to place no stakes to his plants, but, on the contrary, to allow them to cover the soil; by the lining-out method, however, stakes are employed, as with us. A method called "square planting" is common, but the line method admits of as many plants being planted per acre with the advantages of greater heat in the soil, as stated above. The black rot in Tomatos is developed mostly in late-planted plots and those which have had too much manure.

CERTIFICATED ROSES IN THE U.S.A.—On the occasion of the meeting of the Executive Committee of the American Rose Society, held on May 28 last, in New York, at which meeting there was taken up the matters pertaining to the Washington Exhibition, it was resolved that a Certificate of Merit be awarded to the varieties Queen Beatrice (scoring 83 points), Rhea Reid (80 points), and a variety shown by Messrs. MYERS & SAMBMAN (81 points). The following varieties of climbing Roses, viz., Paradise, La Flamma, Delight, and Juanita, shown by Mr. H. WALSH, of Woods Hole, Mass., were awarded a Certificate of Merit, as recommended by the judges of the Washington Exhibition, March, 1907.

Publications Received.—*Liste des Plantes Cultivées dans les Serres Chaudes du Jardin Botanique de L'Etat à Bruxelles*, by Louis Gentil.—*Report on Economic Zoology for year ending April 1, 1907*, by Fred. V. Theobald, M.A., and issued by the South Eastern Agricultural College, Wye, Kent.—*Bulletin of Miscellaneous Information*, No. 6. From the Royal Gardens, Kew. This contains articles on "The Grasses of British Somaliland," by Dr. Otto Stapf (24 pages); "The Flowering of Cultivated Bamboos," by Mr. W. J. Bean; "Accession of Tropical African Plants from 1899-1906," by Dr. Otto Stapf; "New Species of Wild Fungi found in the Royal Gardens, Kew" (illustrated), by Mr. Geo. Massee; "Rhododendron Mariesii," by Mr. W. Botting Hemslay, F.R.S., &c.—*The Significance of Latent Characters: Some Latent Characters of a White Bean*, by Dr. George Harrison Shull. This article is reprinted from *Science*, pp. 792-794, Vol. xxv.—*The Country Gentlemen's Estate Book, 1907*. This work is the Year Book of the Country Gentlemen's Association, Ltd., 24-25, St. James's Street, London, S.W.—*A Simple Method of Bookkeeping for Farmers, Market Gardeners, and Dairy-men*, by H. W. Kersey. The author is lecturer in bookkeeping at the South-Eastern Agricultural College, Wye.—*Quarterly Journal of Forestry*, edited by W. R. Fisher.

THE SPECIES OF POTATOS.

ON Monday, the 8th inst., at the invitation of Mr. Arthur Sutton, a party of gentlemen visited the Reading Nurseries for the purpose of inspecting an interesting collection of plants representing almost all the known species of Potatos, *i.e.*, tuber-bearing *Solanums*. The primary object of the inspection was to determine if possible which species was the parent of the Potato of commerce—*Solanum tuberosum*—since, strange to say, this point has never yet been determined, *S. tuberosum* being, presumably, so named by Linnaeus from the cultivated plant of his time, and not from a wild form. The first exhibits consisted of plants raised from seeds and tubers received from Mr. W. Stuart, of the Vermont Agricultural Station, and assumed to be of the purely wild type of *S. tuberosum*, having been

these, however, agreed sufficiently with the cultivated Potato to be accepted without reserve as its progenitor, and the same may be said of *S. polyadenium* and *S. verrucosum*, of which plants raised both from seed and tubers were exhibited. *Solanum Maglia* was the next, and in connection with this it transpired that presumed specimens of this species raised from tubers first received from Kew in 1886 were not the same as the *S. Maglia* now growing at Kew, a fact attributed to the habit the species possesses of producing tubers a very long distance away from the haulm, and consequently liable to invade the area occupied by other plants. *Solanum Maglia* appears rarely, if ever, to produce fertile seed, but Professor Heckel, of Marseilles, reports that he has obtained a mutation from *Solanum Maglia* by "bud variation," that is to say, one of the tubers of *Solanum Maglia* gave an absolutely

instead of reproducing the parent type, showed the same remarkable variation in the seedlings which is common to the cultivated Potato when grown from seed, and not from tubers.

The next exhibit was *S. etuberosum* (grown at Reading successively for 20 years from tubers received from the Edinburgh Botanical Gardens), or the non-tuberous *Solanum*, a most misleading name, for it not only produces tubers and edible ones, but the *Solanum* genus is a very large one and includes many non-tuberous species. This species was considered by Mr. Sutton to be the most likely progenitor of the culinary tuber, and the bulk of evidence certainly supported that view as opposed to the idea that any of the *S. tuberosum*s so-called of the first exhibits could claim that distinction. *S. Commersonii*, together with some interesting crosses, were then shown side by side with its reputed offspring (by bud variation), "*S. Commersonii* Violet," an exhibit, however, which only tended to confirm the now generally accepted view that the two are quite unconnected, the latter being to all appearances only the well-known Potato "Blue Giant."

An unnamed species, termed merely "the African Potato," was remarkable for producing a large number of long thin stolons from its base, radiating in all directions over the surface of the soil.

As a sort of supplementary exhibit Mr. Sutton showed a facsimile of a water-colour drawing (see *Gardeners' Chronicle*, March 17, 1900, fig. 50), dated 1588, showing the cultivated Potato of that date, signed by the botanist Clusius and contemporaneously authenticated in other ways. Its exact resemblance to the Potatos of to-day in flower, fruit, and foliage, and in everything but the size of the tuber, which is small and irregular in shape, is remarkable, while it certainly was far from agreeing exactly with any of the wild species shown. The curious fact that in more than one of the wild species propagation by the tuber tends to degeneration, while the seedling plants are far more vigorous, finds a singular inversion in the fact that now that the habit of abundant and vigorous tuber production in cultivated Potatos is so common, the production of seed pods has become comparatively rare. Chas. T. Drury, F.M.H., F.L.S.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

SWEET PEA SPORTS.—The knowledge that Sweet Peas of the Countess Spencer type are specially amenable to cross-fertilisation because of their projecting stigmas, and hence their excessive sporting, is not new, for it has been known to many growers of Sweet Peas for some time past. I consider it is very doubtful that this structural peculiarity is entirely the cause of the sporting, for other varieties that have not a projecting stigma have sported appreciably, though none so freely as the Countess Spencer type. But the Sweet Pea is, of all seed-raised plants, peculiarly susceptible to sporting; indeed, the same thing is largely seen in edible Peas, and every seed-grower knows this is the case, even with old-fashioned stocks. A. D.

PROTECTION OF TREES FROM HARES.—Mr. F. V. Theobald, in his recent report, mentioned that he is unaware of the existence of any substance which will render trees distasteful to hares and rabbits; and he has suggested that information which I have been able to give him about one such substance might be of use to many fruit-growers. The substance which I have used for several years in Devonshire is called *Smeareolum*, and is obtainable from Thomas and Co., Ceres Chemical Works, Liverpool, at about 2s. 6d. the gallon. It is certainly effective, and though I do not quite like the appearance of the tree-stems after they have been treated with it, I have not yet traced any injury due to its use. *Spencer Pickering*.



FIG. 19. —CRINUM × H. J. ELWES (C. MOOREI × C. AMERICANUM): COLOUR OF FLOWERS PINK, OF A SHADE SIMILAR TO THAT OF AMARYLLIS BELLADONNA, BUT HAVING WHITISH CENTRES.

(See note on page 35 in the issue for last week)

collected in the wild state in Mexico. This species grows less than a foot high, comes perfectly true from seed, and seedlings are vigorous, but when cultivated from the tubers (which are not much larger than filberts) the plants are very weakly and consequently degenerate. This latter feature and the constancy found in the seedlings markedly distinguish the plants from the cultivated Potato, seedlings of which are notoriously variable, while the tubers produce healthy plants almost indefinitely. A quite distinct form, termed "*S. tuberosum* new species," also from the United States, was much stronger in habit, and like the former comes true from seed; this has its tubers mottled. A third distinct form, *S. t. boreale*, collected in Arizona, and received from the Rev. Aikman Paton, was next shown. None of

distinct type of Potato, originating while the parent tuber was under the surface of the ground, and that this variation when planted had produced a Potato apparently indistinguishable from the well-known cultivated Potato "*Vicar of Laleham*." It will be remembered that in the case of the so-called mutation from *Solanum Commersonii*, claimed by Mons. Labergerie, the result was a Potato considered by many experts as identical with the German Potato "*Blue Giant*." French scientists are divided in the opinions they hold, but in England few experts admit the possibility of one distinct species of *Solanum* or any kind of Potato having transformed itself directly into another by bud variation.

It is noteworthy that seedlings of this supposed mutation from self-pollinated flowers,

NARCISSUS POETICUS AS A MARKET FLOWER.

—Some of the newer hybrids of *Narcissus Poeticus* have now multiplied sufficiently to be available for market planting, and it will be interesting to observe whether or not they will prove a profitable crop. I have every confidence in them. When in conversation with a large market-grower, several years ago, he informed me that when he sent new and choice varieties of Trumpet Daffodils to market he found that they did not realise higher prices than did such standard and well-known kinds as Emperor, Golden Spur, &c., but that when he had sent new and improved varieties of *N. poeticus* he found a marked improvement in their price over those of the old *Ornatus* and others of the type. Recently I had occasion to write to a large grower for some bulbs of a new Poet's Daffodil, as I knew he held the main stock of the variety, but the reply I received was that he did not care to part with more than a very few bulbs, as he intended growing this plant for his cut-flower trade. Within the past two or three seasons stocks of improved varieties of *N. poeticus* have been sold for very high prices, in some cases the purchaser being a market-grower. There is certainly a scarcity of some varieties, which can only be explained by the fact that there is an extra demand, and in several cases prices have actually risen. All these things, to my mind, go to show that there is a good future for this beautiful and useful section of the genus *Narcissus*, and growers who are the first to cultivate the best of the "Pheasant-eye" *Narcissus* for market will find the investment a remunerative one. *F. Herbert Chapman.*

SUMMER PRUNING OF FRUIT TREES.—The tabulated results of summer pruning and the dates recommended for the practice on pp. 400-403 vary in an extraordinary manner, and set one thinking. It is obvious that some of the contributors confuse summer pruning with early disbudding, but they are quite different. It is also apparent that the fear indicated in the leading article on p. 404, that summer pruning may be performed too early, and thus cause basal buds which ought to remain dormant and in due time become fruit buds to burst before autumn into leafy shoots, is largely entertained. It is doubtful if this has ever been proved to have happened. Personally I have never seen it occur, and I have experimented not only on out-of-door fruit trees, but also on indoor ones, particularly vines. Reasoning from analogy, it is the buds on the hardened shoots which ought to burst from the base. If a soft-stemmed *Carnation* is pinched, the upper buds only break into growth, the lower ones remaining dormant; the same thing occurs in the case of the *Fuchsia*, the *Verbena*, and other flowering plants. In the limited space of a circular it is impossible to express one's opinions exactly, and after perusing the table in question I notice that my own meaning is not quite clear. Apples, it is remarked, are not treated. That refers to bush Apples, the only summer pruning which these receive being the removal of "water" shoots on over-vigorous trees, and these are burst off at the junctions of the shoots with the main stem. In the case of Apples trained to wires, practically all the pruning they receive is effected during the growing season. But the knife is employed as sparingly as possible, and mainly to cut off parts of spurs which are unfruitful and weak and in positions where they could never be otherwise. Most of the summer growths are rubbed off, but some broken off, and they are removed principally to admit sunlight to the foliage on the fruiting spurs. Plums require somewhat different treatment from other stone fruits, for their spurs may be allowed to extend several inches from the wall. But even with these trees one has to discriminate, for *Magnum Bonum*, *Monarch*, and other big-leaved varieties are grown more satisfactorily when they are closely pruned. Plums should be knife-pruned, leaving three to five leaves, but at the same time being careful to remove weakly shoots. Apricots require very little pruning if disbudded early in the year, and as a rule the knife is not needed in the case of these trees. In the case of Peaches, disbudding in early summer leaves nothing but the shoots bearing the present year's crops and those necessary for the next year's fruiting. At present the young growths require fastening to the wall and the lateral growths rigidly suppressed. Later, when the fruits have been gathered, any useless branches may be removed. Root pruning is

referred to by some of the compilers. In the rather light soil here, while it is essential to root-prune young trees in order to get them into training, after this has been secured it is beneficial in a greater degree to perpetuate a succession of fibrous roots by means of manual dressings either forked lightly into the soil above the roots, or to skim off the surface soil down to the roots and apply a dressing immediately above these, a surfacing of soil finishing the operation. This latter method is the best system for espaliers and cordons. A simple and efficient method of root-pruning consists in turning out a narrow trench all round the tree to the depth of a spade, and then pushing that implement as deep into the ground as it will go all around the tree. *R. P. Brotherston, Scotland.*

—Most gardeners will admit that summer pruning is especially necessary in the case of cordon, espalier, and wall-trained trees, because of their restricted growth and training; but pyramid, bush, and other trees of larger size, and whose growths are not so severely curtailed, do not require much pruning in summer. The results on pp. 400-403 are interesting, and, in some instances, amusing. On p. 424 Mr. Lewis Castle sums the matter up briefly, and, like Mr. Castle, I should like to have evidence that summer pruning produces fruit buds in the one season. I have never found it have that effect: the result is more biennial than annual. *T. H. Slade, Devonshire.*

Buddleia Colvillei.—As I was the first to bloom this beautiful Himalayan *Buddleia* in Europe, in or about the year 1891, and as I have grown and flowered it every year since, I must, with regret, take exception to the statement by the gardener at Culzean Castle (see p. 26) that it is perfectly hardy. It may be so at Culzean, and in ordinary years it is so on this mild sea-border, but in 1895 we had here on January 5 as much as 29 degrees of frost, and this very nearly killed my big plant. All but the central or main stem succumbed, and had to be cut away. Any severer frost would certainly kill it, so it can not be called perfectly hardy. Neither have I ever seen on it any of the subsidiary or axillary inflorescences mentioned by your correspondent, only the terminal bunches being produced on my plant, and even those are by no means abundant. *W. E. Gumbleton.*

—As I had the pleasure of seeing the handsome *Buddleia Colvillei* in bloom a short time ago in the south-west of Scotland, it is with pleasure I read Mr. Winter's note on p. 26 in the issue for July 13 recording its flowering at Culzean in Ayrshire. It has just flowered for the first time in the garden of Mr. W. D. Robinson-Douglas, of Orchardton, Castle-Douglas, Kirkcudbrightshire, on the shores of the Solway Firth, after having been in the garden for several years without showing flower. At Orchardton it is cultivated against a wall facing almost due west, where it occupies a considerable space and reaches a height of 10 or 12 feet. The weather last winter cut it rather severely, but in June it opened its first flowers, which were very beautiful with their handsome, rosy-red racemes. One would gather that the Culzean plant is not against a wall, and perhaps Mr. Winter will kindly give us some particulars of its precise position. Culzean Gardens are famous in Scotland for their tender shrubs, and the district seems to have a slightly milder climate than that in this part of the south-west of Scotland. I may add that the *Edwardsia* flowered for the first time at Orchardton alongside *Buddleia Colvillei*. The *Index Kewensis* spells the specific name of the latter plant as "Colvillei," while the *Kew Hand-list* makes it "Colvillei." The difference is not a great one, but it is well to be correct whenever possible. *S. Arnott, Sunnymead, Dumfries.* [B. Colville is correct, the species having been named after Sir James Colville, F.R.S., who at the time of its discovery was *Puisse* Judge of the Supreme Court of Calcutta, and President of the Bengal Asiatic Society. See *Botanical Magazine*, t. 7, 449.—Ed.]

RICHARDIA AFRICANA.—These plants have survived several winters uninjured in the waters of these gardens, where they are planted in clumps between other aquatics. They are now in flower, and the large, white spathes are borne a couple of feet above the water. *W. A. Cook, Leonardslee Gardens, Horsham.*

STRAWBERRY KENTISH FAVOURITE (see p. 33).

—The appearance of this variety is similar to *Leader*, but the difference in flavour is marked even in a season like this, when all Strawberries are at a disadvantage in this respect on account of the lack of sunshine. *Kentish Favourite* is a remarkable cropper, and Mr. T. Challis, of Wilton, writing in the *Gardeners' Chronicle* of June 15th, says: "I forced a few plants of this in the same house and concurrently with *Royal Sovereign* . . . the fruits set well, and ripened eight days before *Royal Sovereign*. They were solid and firm in texture, somewhat sweeter, and deeper in colour than *Royal Sovereign*, and possessed a distinct pine flavour." I doubt if the above remarks could apply to Strawberry "Leader." In addition to the Award of Merit from the Royal Horticultural Society, *Kentish Favourite* received the Royal Agricultural Society's "Certificate of Merit" at Lincoln this year. *Laurence J. Cook.*

—Since taking some plants and fruits of this variety to the Temple Show I have received so many requests for information as to how it was raised that I shall be glad if you will kindly insert the following particulars: *Kentish Favourite* was raised from seed saved from Captain, Waterloo, and Sensation, and was the only seedling worth saving out of all the batch. It is a little earlier than *Royal Sovereign* and produces at least four times the weight of fruit per acre and is of much better flavour. It has proved hardier than *Royal Sovereign*, and I have never seen a trace of mildew on it. Being a very dwarf, compact grower it can be planted closer together than other varieties, and if planted early will produce a heavy crop of fruits in the first season. *Walter R. Pierce, St. Dunstan's Nurseries, Canterbury.*

THE RAINFALL IN CARMARTHENSHIRE.

—Referring to Mr. W. A. Cook's statement on p. 33 as to the rainfall at Leonardslee Gardens, Sussex, it may be interesting to some readers to know what a difference there is between the rainfall in Sussex and that in Carmarthenshire. The rain measured here during the last six months is as follows:—January, 2.82; February, 2.90; March, 2.15; April, 3.99; May, 5.48; June, 6.27; total, 23.61. I may mention also that on July 11 our thermometer registered 1° of frost. *F. Surman, The Gardens, Golden Grove.*

THE KAKI.—Having grown the *Diospyros Kaki* for more than 10 years I can fully support the statements of *W. W.* in last week's issue, p. 22. My trees stood the winter of 1906-7 without injury on Streatham Hill, but a little shelter from extreme frost and cutting winds is desirable even in the south of England. The flavour varies considerably in the different varieties. The flavour of my fruits is mild and pleasant. They are free from seeds and easy to eat with a spoon when "bletted." *W. Roupell, Harvey Lodge, Roupell Park, S.W.*

BROAD BEANS COOKED AS SCARLET RUNNERS.—Those who want a nice vegetable for the table should pick Broad Beans when they are young—that is, when the Beans inside are no larger than an ordinary Pea. Cut the pods into thin slices, as is done with *Scarlet Runners*, and cook them in the same manner. When dished up they will have excellent flavour. I think all who do this will be pleased with the result. *L. H. Hallett.*

DARLINGTONIAS AND SARRACENIAS.—These insectivorous subjects are planted in the open at Leonardslee. They appear very brilliant when viewed in the sunshine. *Darlingtonias* do not flower with the same freedom as the *Sarracenias*, but they are nevertheless very pretty. *W. A. Cook, Leonardslee Gardens.*

ROSE A PARFUM DE L'HAY.—With reference to Mr. Gumbleton's note on this Rose in last week's issue (p. 25), I may state that it flowered here last year, and it is blooming at the present time. It is very fragrant, but it has certain defects. Colour is a matter of taste, but I do not care for its purplish tone. More serious, however, is the weak character of the flower-stalks, which are not strong enough to bear the flowers up, and the latter consequently droop when nearly expanded. It is not suited to a wet season, and both during last year—which was not by any means a wet one—and also this, many of the flowers did not open and the others were soon disfigured. In its perfume it reminds one greatly of some of the old garden Roses, such as the *Damask Rose*, and this is certainly a strong point in its favour. *S. Arnott, Sunnymead, Dumfries.*

SOCIETIES.

NATIONAL SWEET PEA.

JULY 16.—The seventh annual exhibition of this Society was held on this date in the Royal Horticultural Hall, Vincent Square, Westminster. The show was a success in every respect, and the finest ever held by this young and enterprising Society. The entries were more numerous than those of last year; they numbered 797, spread over 88 classes, and the bunches of flowers totalled 3,217, or 1,200 more than at the corresponding show of last season. The whole of the spacious Hall was filled with exhibits, even in the annexes, and three rooms were further requisitioned upstairs to hold some of the displays that could not be accommodated on the ground floor. That the exhibition is a popular one was evidenced by the large patronage afforded it by the general public. The weather was perfect. The arrangements left nothing to be desired, and the Secretary, Mr. C. H. Curtis, is to be congratulated on the success of the exhibition—the first during his term of office. Mr. BREADMORE again met with remarkable success in the principal open classes; but in the amateurs' section the principal winner of last year's prizes was excelled by other exhibitors. New varieties were numerous, and of these seven were selected for Awards of Merit, but none was deemed worthy of the Society's First-class Certificate. The finest new flower was the orange-scarlet variety, St. George. In more than one instance flowers shown under the name of John Ingman were disqualified. The only apparent difference was that they had hooded instead of waved standards.

SPECIAL AUDIT CLASS.

This was for 15 bunches of Sweet Peas, distinct. The schedule required the varieties to be selected from those following, which were the highest on the audit list of 1906:—King Edward VII., John Ingman, Gladys Unwin, Helen Lewis, Duchess of Sutherland, Dainty, America, Princess of Wales, Hon. Mrs. E. Kenyon, Jeannie Gordon, Navy Blue, Mrs. Walter Wright, Duke of Westminster, Black Knight, Lady Grizel Hamilton, Dorothy Eckford, Agnes Johnston, George Gordon, Helen Pierce, and Coccinea. The 1st prize consisted of the Sutton Silver Challenge Cup, the Gold Medal of the National Sweet Pea Society, and a monetary prize. Trade growers were excluded. Nine excellent exhibits were staged, and that shown by Mr. THOMAS STEVENSON, Woburn Place, Addlestone, was adjudged the best. His varieties were: King Edward VII., John Ingman, Gladys Unwin, Helen Lewis, Dainty, Princess of Wales, Hon. Mrs. E. Kenyon, Jeannie Gordon, Navy Blue, Mrs. Walter Wright, Duke of Westminster, Black Knight, Lady Grizel Hamilton, Dorothy Eckford, and Helen Pierce. The 2nd prize was awarded Mr. T. JONES, Bryn Penylan, Ruabon, Wales, whose best blooms were those of Helen Pierce, Dainty, Mrs. Walter Wright, Helen Lewis, Hon. Mrs. E. Kenyon, King Edward VII., Jeannie Gordon, and Dorothy Eckford. 3rd, Mr. H. H. LEES, Warblington Cottage, Havant.

In this class some of the exhibits were disqualified as not being true to name. This was seen in the case of flowers shown under the name John Ingman, but which had not the waved standard associated with that variety. Mr. A. E. USHER, Banston House, Blandford, Dorset, showed a splendid collection, but was disqualified for his specimens labelled John Ingman and George Gordon.

CLASSIFICATION CLASS (OPEN).

This was for a collection of 20 varieties of Sweet Peas including one variety only of each colour given in the Society's Classification Tables. It is intended to illustrate the colour distinctions in the Society's classification, and to bring into special prominence the finest varieties in the several colours. The prizes were given by the President, Sir George Cooper, Bart., Hursley Park, Winchester. The best display was staged by Mr. C. W. BREADMORE, 120, High Street, Winchester, although it was not much in advance of the 2nd prize exhibit shown by Messrs. G. & A. CLARK, LTD., Dover. Another good collection shown by Messrs. SALTMARSH & SON, Chelmsford, was awarded the 3rd prize. Mr. BREADMORE had superb flowers of Coccinea, Lady Grizel Hamilton, Jeannie Gordon, Lottie

Eckford, Countess Spencer, Romolo Piazzani, King Edward VII., Princess of Wales, Helen Lewis, Duke of Westminster, Duchess of Sutherland, Mrs. H. Wright, Black Knight, Agnes Johnston, John Ingman, Jessie Cuthbertson, Helen Pierce, and Dora Breadmore. Amongst Messrs. CLARKE's varieties were excellent examples of Gladys Unwin, America, Lady Grizel Hamilton, Beacon, Helen Pierce, Henry Eckford, George Gordon, &c.

COLLECTIONS OF SWEET PEAS (OPEN).

The largest class was that for 36 bunches of Sweet Peas in distinct varieties. This brought a good competition amongst five exhibitors. Mr. BREADMORE was again to the fore with a remarkably fine exhibit of flowers of large size on strong stalks, and with beautifully-developed colours, of such standard varieties as Mrs. A. Watkins, King Edward VII. (very fine), Agnes Johnston, Evelyn Breadmore (white, with a faint suffusion of pink), Audrey Crier, Miss Willmott, Janet Scott (a suffusion of pink on a yellow ground), Lady Cooper, Helen Pierce, Phenomenal, Mrs. Collier (yellow), Henry Eckford, and several seedlings of merit.

Messrs. CLARK were again 2nd. This firm had choice blooms, but they were shown with shorter stalks, and did not stand up so as to appear to the best advantage. Their best varieties were Dora Breadmore, Helen Lewis, King Edward VII., Dorothy Eckford (white), America (a beautiful flaked rose variety), Janet Scott, Beacon, &c. 3rd, Messrs. G. STARK & SON, Great Ryburgh, Norfolk.

Twenty-four bunches of Sweet Peas, distinct.—This important class was represented by six exhibits, and keen competition resulted. Mr. BREADMORE again won the premier prize, this time easily, with flowers of high quality, bold in spike, fine in colour, and clear of petal. His best bunches were those of J. T. Crier, George Herbert, Vera Jeffery, Princess of Wales, Tweedy Smith, Etta Dyke (white), Nora Breadmore, Helen Lewis, Audrey Crier, Bolton's Pink, and America. Again Messrs. CLARK, LTD., won the 2nd prize; 3rd, Messrs. SALTMARSH & SON, Chelmsford.

Twelve bunches of Sweet Peas, distinct.—This brought forth 12 displays, amongst which the flowers generally were of choice quality. None was, however, equal to those shown by Mr. BREADMORE, and he was again placed 1st for huge spikes of massive flowers, well selected in the matter of colours. We may select Prince of Asturias (dark crimson), Helen Lewis, Etta Dyke, Vera Jeffery (a suffusion of pale pink), Evelyn Breadmore, George Herbert (fine of colour), Mrs. H. H. Lees, &c., as the more notable varieties. 2nd, Messrs. ISAAC HOUSE & SON, Coombe Nursery, Westbury-on-Trym, Bristol.

AMATEURS' CLASSES.

Twenty-four bunches of Sweet Peas, distinct.—The 1st prize in this important class carried with it the Silver Medal of the Society. It was gained by W. N. RAWNSLEY, Esq., Alford, Lincolnshire (gr. Mr. T. Vickers), for a display remarkable for the length of the flower stalks, the fine colours of the flowers, and general excellence. He showed David R. Williamson, Nora Unwin, Henry Eckford (one of the finest vases of this superb variety seen in the Hall), Helen Lewis, Queen Alexandra, James Grieve (a fine yellow variety), Black Knight, Countess Spencer, Mrs. Walter Wright, Dorothy Eckford, &c. 2nd, Mr. SILAS COLE, Althorp Park Gardens, Northampton.

Eighteen bunches of Sweet Peas, distinct.—The best exhibit amongst six was that shown by G. D. FABER, Esq., C.B., M.P., Rush Court, Wallingford, Berks (gr. Mr. J. Dymock); 2nd, Mr. A. H. HICKMAN, Eagle and Spur Inn, Cookley, near Kidderminster.

Six bunches of Sweet Peas, distinct.—This class evoked a strong competition, and no fewer than 17 exhibits were displayed, the majority of which were of excellent quality.

Mr. SILAS COLES, Althorp Park Gardens, Northampton, won the 1st prize for choice examples of Lady Sarah Spencer, Helen Lewis, Navy Blue, Countess Spencer, S. Cole, Dorothy Eckford, Hon. Mrs. Kenyon, &c. 2nd, Mr. A. E. USHER, Ranston House, Blandford, Dorset, who had a remarkably fine bunch of the variety Henry Eckford.

New varieties.—The best twelve bunches of Sweet Peas three of each of the following new

varieties: Mrs. Alfred Watkins, E. J. Castle, Nora Unwin, and Frank Dolby, were shown by Mr. J. JONES, Providence Cottage, Souton Road, Wem.

ECKFORD CHALLENGE CUP.

A trophy called the Henry Eckford Memorial Challenge Cup, of the value of 50 guineas, was offered for 12 bunches of Sweet Peas of distinct varieties. The first prize also included the Gold Medal of the National Sweet Pea Society. The Cup must be won three times in direct succession before becoming the absolute property of any exhibitor. It was won for the first time last year by Mr. Thomas Jones, Ruabon, but this year Mr. JONES was 2nd to Mr. THOS. STEVENSON, Woburn Place Gardens, Addlestone. This formed the strongest class in the show, and no fewer than 18 displays were staged. The judges had no light task in arriving at a decision, for the exhibits generally were of high merit, and not much difference was seen in the first half-dozen displays. The decision went in favour of the exhibitor named, with Mr. JONES 2nd, and Mr. V. B. JOHNSTONE, Ryhall Hall, Stamford, 3rd. Not a weak bunch was seen in Mr. STEVENSON's display. His dozen varieties comprised Paradise (a magnificent bunch), Henry Eckford, Mrs. Collier, Rosie Adams (new), Nora Unwin, Helen Lewis, Black Knight, King Edward VII., Doris Stevenson, Mrs. Hardcastle Sykes, and Romolo Piazzani. Mr. JONES had very tall bunches arranged somewhat straggling, of Helen Lewis, Henry Eckford, Mrs. Hardcastle Sykes, John Ingman, Clara Curtis (yellow), Frank Dolby (heliotrope), &c. 3rd, Mr. V. B. JOHNSTONE, Ryhall Hall, Stamford, with a bright, clean lot, not so big as some, but of fresh appearance. Helen Pierce, Helen Lewis, Henry Eckford, Bolton's Pink, Jeannie Gordon, and Paradise were his best flowers.

HORACE WRIGHT CHALLENGE BOWL.

This trophy was offered for nine bunches of Sweet Peas, distinct, and the class was designed to draw special attention to varieties suitable for garden decoration. Competitors were required to make their selection from those following:—Apple Blossom, Lady Grizel Hamilton, Countess Spencer, Janet Scott, Venus, Peach Blossom, Princess Beatrice, Navy Blue, Little Dorrit, Dorothy Eckford, King Edward VII., Bronze King, Triumph, Mrs. Walter Wright, Lady Beaconsfield, and Salopian. It is required that the Cup be won three times, not necessarily in succession, to become the absolute property of an exhibitor. Five growers competed, with the result that Mr. A. BASILE, Woburn Park Gardens, Weybridge, was placed 1st for remarkably tall inflorescences of big flowers. He had King Edward VII., Janet Scott, Dorothy Eckford, Countess Spencer, Lady Grizel Hamilton, Mrs. Walter Wright, Peach Blossom, Venus, and Triumph. 2nd, W. H. RAWNSLEY, Esq. (gr. Mr. T. Vickers), Well Vale, Alford, Lincolnshire.

SPECIAL COLOUR CLASSES.

Prizes were offered for single bunches of Sweet Peas of certain colours. The winning varieties were as follow:—White, Dorothy Eckford; Blush, Duchess of Sutherland; Crimson, Queen Alexandra; Cerise, Coccinea; Rose and Carmine, John Ingman; Pink, Countess Spencer; Orange, Henry Eckford; Yellow and Buff, Dora Breadmore; Lavender, Lady Grizel Hamilton; Blue, Navy Blue; Mauve, Mrs. Walter Wright; Violet and Purple, Duke of Westminster; Maroon and Bronze, Black Knight; Magenta; George Gordon; Picotee-edged, Dainty; Striped and Flaked Red and Rose, America; Striped and Flaked Purple and Blue, Princess of Wales; Bi-color, Jeannie Gordon; Fancy, Agnes Johnston; Marbled, Helen Pierce.

Varieties with waved standards. Classes were provided for both trade and amateur growers, for varieties with waved standards. The best twelve bunches in the amateurs' section were shown by Mrs. TIGWELL, Harrow View, Greenford. This exhibitor had excellent examples of Helen Lewis, Mrs. Alfred Watkins (pale pink), Phenomenal, Enchantress (pink), E. J. Castle (carmine), Countess Spencer, Mrs. Hardcastle Sykes, Gladys Unwin, Geo. Herbert (carmine), Frank Dolby, Nora Unwin, and A. J. Cook.

The best collection in the traders' classes comprised the varieties Mrs. Alec Ware (white, tinged with pink), Olive Bolton (pink), Queen of Norway (heliotrope), Clara Curtis (yellow), Tom Bolton (dark maroon), Mrs. Chas. Foster (pale lavender), May Malcolm (pink), and Purity (white).

AWARDS OF MERIT.

Sweet Pea St. George.—This variety, the deepest and best of the orange-shaded flowers, is described on p. 36. It received an Award of Merit at the recent Holland House Show. From Messrs. HURST & SON, Houndsditch.

Elsie Herbert.—A flower suggestive of the variety Dainty, see p. 36. Shown by Mr. C. W. BREADMORE, Winchester.

Silas Cole.—A flower of the Black Knight type. The parts are very big and expanded; the colour is bluish-violet in the centre, shading to a deep maroon in the outer parts of the petals. Shown by Mr. SILAS COLE.

Nancy Perkins.—A flower of pale orange-scarlet, shaded with terra-cotta. The standard is frilled. Shown by Mr. H. A. PERKINS, York Lodge, Reigate.

The Marquis.—A large flower of lavender shade, with a big waved standard. The best variety of its colour. Shown by Messrs. DOBBIE & Co., Rothesay.

Rosie Adams.—A variety of unique shades of colours. The central parts are violet or heliotrope, and this merges to rose in a large standard. The inflorescence is of large size. Shown by THOS. STEVENSON, Woburn Place Gardens, Addlestone.

Evelyn Hemus.—A creamy-white variety with rose-coloured margins (see our issue for June 29, 1907, p. 427). Shown by Miss HEMUS, Upton-on-Severn.

NON-COMPETITIVE EXHIBITS.

Displays of Sweet Peas were shown by Mr. W. J. UNWIN, Histon, Cambridge (Gold Medal); Mr. C. W. BREADMORE, Winchester (Silver-Gilt Medal); Mr. HENRY ECKFORD, Wem, Shropshire (Silver Medal); E. W. KING & Co., Coggeshall, Essex (Silver-Gilt Medal); GILBERT & SON, Bourne, Lincolnshire; BAKERS, Wolverhampton (Gold Medal); J. CARTER & Co., Holborn (Silver-Gilt Medal); HOBBS, LTD., Dereham, Norfolk (Gold Medal); H. CANNELL & SONS, Swanley, Kent (Silver-Gilt Medal); JAMES VEITCH & SONS, LTD., King's Road, Chelsea (Silver-Gilt Medal); DOBBIE & Co., Rothesay, N.B. (Gold Medal); R. H. BATH & Co., LTD., Wisbech (Silver Medal); Mr. T. W. DARLINGTON, Warton, Carnforth (Bronze Medal); Miss HEMUS, Holdfast Hall, Upton-on-Severn (Silver Medal); WEBB & SONS, Wordsley, Staffordshire (Silver-Gilt Medal); G. & A. CLARK, LTD., Dover (Silver Medal); Mr. ROBT. SYDENHAM, Tenby Street, Birmingham (Bronze Medal); TOOGOOD & SONS, Southampton (Silver Medal); G. STARK & SON, Great Ryburgh (Silver Medal).

WOLVERHAMPTON FLORAL FETE.

JULY 9, 10, 11.—The annual floral fete, which took place on the above dates, compared favourably with the best of the 18 previous shows held in the West Park, Wolverhampton. If we except last year, when Roses and Sweet Peas were so splendidly shown, it is doubtful if a bigger or better exhibition has been seen at Wolverhampton. The exhibits were contained in five large marquees, and several new features were introduced. One was the provision of a special class for foliage plants, and another a class for pot fruit trees, prizes amounting to £57 10s. being offered in the former class, and £46 1s. in the latter. Unfortunately, rain fell heavily during a portion of the first day. Mr. W. E. Barnett, the courteous secretary, is to be congratulated upon the arrangements made for the convenience and comfort of visitors to the show.

PLANTS (OPEN).

This section was divided into seven classes, for which upwards of £190 was offered in prizes. The two leading classes were for groups arranged for effect on ground spaces not exceeding 350 square feet. One was for plants in and out of bloom, and the other for foliage plants only. There were three competitors in each class, and their exhibits were arranged in circles near each end of the tent containing the specimen plants. The 1st prize of £25 for plants in and out of flower went to last year's champions, Messrs. JAMES CYPHER & SONS, Queen's Road,

Cheltenham. The plants used were of excellent quality, and the arrangement light and graceful. A large Kentia crowned the centre of the group, around which brightly-coloured Codiaums, Caladiums, and well-flowered plants of Fuchsia triphylla and Clerodendron fallax, &c., were arranged. Eight small mounds in the body of the group, composed of a rich variety of flowering and foliage plants, together with sprays of choice Odontoglossums, were exceedingly pretty. The 2nd prize went to Mr. W. HOLMES, West End Nurseries, Chesterfield, and the 3rd to Mr. W. VAUSE, Leamington.

In the class for ornamental foliage plants, Ferns, &c., the LEAMINGTON NURSERYMEN & FLORISTS, LTD., Leamington, were placed first, with a very bright and well-balanced group, in which plants with silvery-grey, yellow, and reddish-coloured foliage prevailed. The 2nd and 3rd prizes were taken by Mr. W. HOLMES and Mr. W. VAUSE respectively.

In a class for 20 plants (of which eight were to be in flower) growing in pots not exceeding 8 inches in diameter, Messrs. JAMES CYPHER & SONS beat the other two competitors, Sir A. MUNTZ, Bart., M.P., Rugby (gr. Mr. H. Blake-way), and Mr. W. VAUSE, who were placed 2nd and 3rd respectively. The 1st prize collection contained 17 beautiful flowering specimens and three Codiaums.

The 1st prize of £10 for 12 plants (not fewer than six to be in flower) was also secured by Messrs. JAMES CYPHER & SONS. The principal plants were: *Ixora Williamsii*, *Rondeletia speciosa*, *Bougainvillea Cypheri*, *Statice intermedia*, and *Erica Cavendishii*. 2nd, Mr. W. VAUSE.

In a class for a collection of flowering plants, one kind only (any number of varieties of the same kind allowed), to occupy ground spaces 9 feet by 5 feet, there were four exhibitors, and, as in the previous classes, the premier award went to Messrs. JAMES CYPHER & SONS, whose plants of *Begonia Gloire de Lorraine* and *Turnford Hall* were of large size and abundantly covered with flowers. J. A. KENRICK, Esq., Berrow Court, Edgbaston (gr. Mr. A. Cryer), was 2nd with a beautiful patch of *Streptocarpus*, bearing large flowers of good colours.

The best group of tuberous-rooting Begonias came from Mr. F. DAVIS, Pershore, whose double-flowered varieties were of immense size.

The best half-dozen exotic Ferns were staged by J. A. KENRICK, Esq., Edgbaston (gr. Mr. A. Cryer).

PLANTS (AMATEURS).

The 1st prize of £10 offered for a group of plants in or out of flower, arranged for effect, was won by J. A. KENRICK, Esq., with a collection of well-grown plants artistically arranged.

Sir A. MUNTZ, Bart., M.P., Rugby (gr. Mr. H. Blake-way), showed the best collection of six stove and greenhouse plants; and C. MARSTON, Esk., Compton (gr. Mr. W. E. Wall), won the 1st prize for Gloxinias.

ROSES (OPEN).

Notwithstanding the unseasonable weather, Roses were shown in good condition.

The 1st prize of £20 for 72 distinct varieties was won by Messrs. FRANK CANT & Co., Colchester, with superb flowers, amongst which Medea, Rev. Alan Cheales, Marie Baumann, Mrs. R. G. Sharman Crawford, Frau Karl Druschki, Killarney, and Florence Pemberton were particularly good. 2nd, Messrs. D. PRIOR & SON, Colchester.

In the class for 48 blooms, distinct, out of eight exhibits, the best came from Messrs. R. HARKNESS & Co., Hitchin, whose flowers, especially those of Ulrich Brunner, Mrs. W. J. Grant, Mrs. John Laing, and A. K. Williams were above the average merit. 2nd, Messrs. D. PRIOR & SON; 3rd, Messrs. B. R. CANT & SONS, Colchester.

For 12 distinct varieties (trebles), Messrs. D. PRIOR & SON were most successful, and showed lovely specimens of Bessie Brown, Mrs. W. J. Grant, and Countess of Caledon.

Messrs. PRIOR & SON also won the 1st prizes in the classes for (1) 24 distinct varieties, (2) 12 blooms of any dark variety, (3) 12 blooms of any light variety, and (4) nine varieties of Teas and Noisettes, as well as the Gold Medal and a sum of £2 offered for 12 varieties put into commerce during the years 1904-5-6. In a class for 12 Tea Roses, Mr. GEORGE PRINCE, Oxford, beat Messrs. FRANK CANT & Co.

The best exhibit of 12 bunches of Roses with foliage and buds as cut from the plants was from Mr. GEORGE MOUNT, who had exquisite flowers of J. B. Clark, Mrs. W. J. Grant, and Killarney; 2nd, Mr. JOHN MATTOCK, Oxford.

BOUQUETS AND CUT FLOWERS.

Competition for bouquets was poor, only two competitors staging exhibits in each of the three classes provided for these.

The exhibits with which Messrs. PERKINS & SONS, Coventry, gained the 1st prize for (1) bouquet for the hand, (2) bridal bouquet (with Orchids) and two bridesmaid's bouquets (Orchids excluded), and (3) feather-weight bouquet, were excellent. Mr. J. GARNER, Hale, was awarded the 2nd prize in each class.

Of the four exhibitors who competed in the class for a collection of hardy flowers covering a space of 15 feet by 5 feet, Messrs. G. GIBSON & Co., Bedale, won the 1st prize with a beautifully fresh group, in which were large masses of Iceland Poppies, *Tritoma Tuckii*, *Gladiolus Blushing Bride*, *Gaillardias*, *Campanulas*, *Pyrethrums*, &c.; 2nd, Messrs. HARKNESS & SONS, Bedale.

Mr. A. BASTOCK, Moseley, was responsible for the most tasteful arrangement of Pansies and Violas covering a space of 7 feet by 3 feet.

DINNER-TABLE DECORATIONS.

Eight tables were placed before the judges, who awarded the 1st prize to THE LEAMINGTON NURSERYMEN & FLORISTS, LTD., for a dainty arrangement of flowers, consisting of small-flowered Orchids, relieved with *Selaginella*, *Asparagus*, &c.; 2nd, Mr. W. J. GARNER, Hale.

The best collection of decorative plants and cut flowers arranged on a table measuring 6 feet by 4 feet came from C. T. MANDER, Esq., Compton (gr. Mr. J. F. Simpson), who made an effective display with Carnations, Cannas, and ornamental foliage plants.

SWEET PEAS.

For a collection of 18 varieties, the 1st prize of £3 and the National Sweet Pea Society's special Gold Medal was worthily awarded to Mr. C. W. BREADMORE, Winchester, for a superb collection. The varieties Audrey Crier, Vera Jeffrey, Helen Lewis, Dudley Lees, Queen Alexandra, and Evelyn Breadmore were very meritorious. Mr. T. JONES, Ruabon, secured £2 and the National Sweet Pea Society's special Silver Medal offered as 2nd prize.

Prizes offered by Mr. Henry Eckford, Wem, for 12 varieties only tempted three exhibitors. 1st, Mr. A. H. HICKMAN, Cookley.

Five competitors entered for the four prizes offered by Mr. Robert Sydenham, Birmingham, for 12 varieties. 1st, A. HUGHES, Esq., Knowle (gr. Mr. T. Parry), with a beautifully fresh lot; 2nd, Mr. T. JONES, Ruabon, who also gained the first prize of £3 offered by Messrs. Baker's, Wolverhampton, for 12 varieties.

FRUIT AND VEGETABLES.

These were well shown, the principal awards being as follows:—

The premier prize of £7 10s. offered for a collection of eight dishes of fruit was won by Lord SAVILE, K.C.V.O., Rufford Abbey (gr. Mr. J. Doe), with beautiful examples of Madresfield Court Grape, Stirling Castle and Dymond Peaches, Pine Apple and Downton Nectarines, &c. 2nd, The Duke of WESTMINSTER, Eaton Hall, Chester (gr. Mr. N. F. Barnes), whose exhibit included shapely, well-finished fruits of Lord Napier Nectarine and a splendid dish of Lady Sudeley Apples.

Lord SAVILE, K.C.V.O. (gr. Mr. J. Doe), also won 1st prizes in the classes for (1) four bunches of Grapes in distinct varieties; (2) two bunches of white; and (3) two bunches of black Grapes. J. H. KING, Esq., Ashford, Kent (gr. Mr. J. G. Weston), being 2nd in the first two classes, and the Duke of WESTMINSTER, Eaton Hall (gr. Mr. N. F. Barnes), 2nd in the other classes.

LORD HATHERTON, Penkridge (gr. Mr. H. Taylor), staged the best green-fleshed Melon (Earl's Favourite); and W. D. WINTERBOTTOM, Esq., Derby (gr. Mr. G. Brown), won the 1st prize in the class for scarlet-fleshed varieties.

Competition was strong in the Peach and Nectarine classes. The Duke of WESTMINSTER, Eaton Hall (gr. Mr. N. F. Barnes), had a lovely dish of Royal George Peach, and the dish of Humboldt Nectarine from Messrs. T. RIVERS &

SON, of Sawbridgeworth, was one of the best in the show.

A. HUGHES, Esq., Knowle (gr. Mr. T. Parry), carried off the 1st prize for three dishes of Strawberries, distinct varieties; and Lord ALDENHAM, Elstree (gr. Mr. E. Beckett), showed the best three dishes of Tomatos, distinct varieties.

FRUIT TREES IN POTS.

This new feature was a source of attraction to many visitors. The 1st prize of £20, given by the society, and £5 added by Mr. Alderman (RADDOCK, J.P.), for fruit trees in pots was well won by Messrs. T. RIVERS & SON, Sawbridgeworth, whose collection was displayed on low staging 20 feet by 9 feet erected in the centre of the specimen plant tent, and included trees bearing handsome fruits of Thomas Rivers and Sea Eagle Peaches, Early Rivers and Victoria Nectarines, Lemons, Oranges, Plums, Cherries, and Grapes. 2nd, THE KING'S ACRE NURSERIES, LTD., Hereford; 3rd, Earl of HARRINGTON, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre).

VEGETABLES.—Messrs. Sutton & Sons' prizes were offered for six distinct kinds of vegetables, and of the six competitors, it was found that Lord ALDENHAM, Elstree (gr. Mr. E. Beckett), had the best collection; the EARL OF LATHOM, Ormskirk (gr. Mr. B. Ashton), being 2nd.

Messrs. Webb & Sons' prizes were for eight distinct kinds of vegetables. In this class the last-named exhibitor was placed first, and the Marquis of NORTHAMPTON, Northampton, (gr. Mr. A. R. Searle), 2nd.

Messrs. Webb & Sons also offered prizes for vegetables restricted to gardeners and amateurs residing within ten miles of Wolverhampton. 1st, Lord HATHERTON, Penkridge (gr. Mr. H. Taylor).

The best collection of six varieties of fruits (Pines excluded) staged by amateurs, came from Lord SAVILE (gr. Mr. J. Doe); and the 1st prize for a collection of ten kinds of vegetables was won by Lord ALDENHAM, Elstree (gr. Mr. E. Beckett).

HONORARY EXHIBITS.

Messrs. JARMAN & Co., Chard, Somerset, staged Roses, Sweet Peas, and sprays of Zonal Pelargoniums. (Silver Medal.)

Messrs. E. & H. SUCKLING, Wolverhampton, sent floral designs and miscellaneous cut flowers. (Gold Medal.)

From Messrs. SUTTON & SONS, Reading, came a nice display of fruit and vegetables, intermingled with graceful foliage plants and cut flowers. (Gold Medal.)

Messrs. HEWITT & Co., Solihull, Birmingham, had a very bright collection of hardy border flowers and Roses, in which Pæonies, Gladioli, Lilliums, Campanulas, and new Violas were conspicuous. (Gold Medal.)

THE BATHS AND PARKS COMMITTEE OF THE WOLVERHAMPTON CORPORATION (Supt. Mr. A. Webster), contributed a large group of miscellaneous flowering and foliage plants. (Gold Medal.)

Mr. ROBERT SYDENHAM, Birmingham, occupied a table with rustic stands decorated with Sweet Peas. (Silver Medal.)

Messrs. GEO. BOYES & Co., Leicester, sent cut Carnations. (Silver Medal.)

Messrs. DOBBIE & Co., Rothsay, contributed a large bank of flowers of a very fine strain of Antirrhinums, together with Delphiniums, Sweet Peas, and a large collection of Pansies. (Gold Medal.)

Messrs. BAKERS, Wolverhampton, occupied upwards of 900 square feet with hardy flowers, Sweet Peas, Roses, sprays of Zonal Pelargoniums, and a number of well-executed floral devices. (Gold Medal and Silver Cup.)

Messrs. T. RIVERS & SON, Sawbridgeworth, staged pot fruit trees and gathered fruit. (Gold Medal.)

Messrs. JAMES RANDALL & SONS, Shirley, Birmingham, sent a prettily-arranged group of cut Carnations. (Gold Medal.)

Mr. C. F. WALTERS, Balcombe, Sussex, showed a splendid lot of cut Carnations of the Malmaison, American and Border varieties. (Gold Medal.)

Messrs. WEBB & SONS, Stourbridge, showed a group of flowering plants, Sweet Peas, and a small collection of fruit and vegetables. (Silver Medal.)

Messrs. CLIBRANS, Altrincham, sent a pleasing group of hardy shrubs, in which variegated

Ivies, Japanese Maples, and the gold and silver-leaved varieties of Aralia sinensis were conspicuous. (Gold Medal.)

From Mr. JOHN E. KNIGHT, Wolverhampton, came a group of flowering and foliage plants and cut flowers. (Gold Medal.)

Messrs. DICKSON, Chester, sent Roses and hardy flowers. (Silver Medal.)

Messrs. TOM B. DOBBS & Co., Wolverhampton, made a large display on the lawn with rustic arches, &c., and flowering plants arranged in small groups. (Gold Medal.)

CROYDON HORTICULTURAL.

JULY 10.—This society held its annual show in the grounds of Brickenden House on this date. The weather was cold and rain fell at intervals, with the result that the visitors were comparatively few in number.

ROSES.

These flowers were abundantly shown, and generally the blooms were of fine quality. In the open classes, in which nurserymen competed, most of the prizes were won by Colchester firms.

In the class for 48 distinct varieties, Messrs. B. R. CANT & SONS, Colchester, were awarded the 1st prize and a Silver-Gilt Medal of the N.R.S. for fine large blooms, in the best condition, of such varieties as J. B. Clark, Caroline Testout, Maman Cochet, Comtesse de Ludre, Mildred Grant, Bartholomew Joubert (a fine crimson flower), Frau K. Druschki, and Gustave Grunerwald, the lighter coloured Roses being generally the finer. 2nd, Messrs. F. CANT & Co., Colchester, with an almost equally fine lot of flowers.

The best exhibit of 24 blooms, distinct, shown in triplets, were exhibited by Messrs. B. R. CANT & SONS. The following were notable varieties: Capt. Hayward (generally extra fine this year), A. K. Williams, Tom Wood, A. Colomb, and Duchess de Morny. 2nd, Messrs. D. PRIOR & SON, Colchester, for excellent blooms.

In another class for 24 blooms, distinct, Messrs. HICKS & BLOOMFIELD, of Bath Road, Reading, were awarded the 1st prize; blooms of Mildred Grant, Frau K. Druschki, Killarney, Capt. Hayward, Mrs. J. Laing, Mme. Jules Gravereaux were well shown in this exhibit. 2nd, Mr. F. J. JEFFERIES, nurseryman, Willis Road, West Croydon. His blooms were inferior in size to the Colchester Roses, yet many, such as Marquise de Litta, Mrs. McKee (a lovely creamy-white flower), and Countess Caledon, were very good examples.

In a class for 18 Tea or Noisette varieties, distinct, Messrs. B. R. CANT & SONS had the best display. In this exhibit we noted Souvenir d'Elise Vardon, S. de Pierre Notting, Maman Cochet, Bridesmaid, Mme. de Watteville, and Ernest Metz. 2nd, Messrs. F. CANT & Co. 3rd, Messrs. D. PRIOR & SON.

The best 12 Roses of one variety were shown by the last-named firm, the variety being Lady Ashdown. 2nd, Messrs. HICKS & BLOOMFIELD, with Mildred Grant. 3rd, Messrs. F. CANT & Co., with Frau K. Druschki.

In the similar class for 12 Teas or Noisettes, Messrs. B. R. CANT & SONS won with the variety Mrs. E. Mawley. 2nd, Messrs. F. CANT & Co., with the same kind. 3rd, Messrs. D. PRIOR & SON, with Maman Cochet.

AMATEURS.

The schedule provided for a new challenge cup competition, offered for 36 blooms, distinct. Many of the blooms shown in this class compared favourably with those grown in Colchester. The 1st prize was awarded to ALFRED TATE, Esq., Downside, Leatherhead, whose blooms of Gustave Piganeau, Capt. Hayward, Mme. Verdier, La France de '89, J. B. Clark, and Beauty of Waltham could scarcely be excelled. 2nd, E. J. HOLLAND, Esq., Silverdale, Sutton, with hardly an inferior bloom in his collection. The varieties Hugh Dickson, Suzanne Marie Rodocanachi, and François Michelin were all superb. 3rd, E. M. EVERSFIELD, Esq., Denne Park, Horsham.

Mr. TATE was also 1st for 24 Roses, distinct. 2nd, G. A. HAMMOND, Esq., Cambrian House, Burgess Hill.

For the best 18 Tea or Noisette blooms the

1st prize was won by F. SLAUGHTER, Esq., Steyning, who showed in good form the varieties Mrs. E. Mawley, Maman Cochet, Cleopatra, and Comtesse de Nadaillac. 2nd, A. TATE, Esq.

Mr. TATE was 1st in the class for 6 Roses, 3 trusses of each.

The class for 12 Roses, one variety, brought some very fine blooms. E. J. HOLLAND, Esq., was awarded the 1st prize. 2nd, G. A. HAMMOND, Esq.

The best 12 Teas were shown by Mr. E. M. EVERSFIELD; and in the class for 4 Roses, distinct, shown in triplets, G. A. HAMMOND, Esq., won the 1st prize. This last-named exhibitor won in the class for 12 Roses, distinct varieties, with excellent blooms of J. B. Clark, Mildred Grant, Hugh Dickson, and Mrs. S. Crawford, &c.

The schedule made provision for local Rose classes. The chief was that for 12 Roses, distinct, the 1st prize for which included a Challenge Bowl, of the value of 12 guineas, and the N.R.S. Medal. They were won by PERCY F. BECK, Esq., Hambrook, Wallington, for quite a moderate lot of flowers, the Silver-Gilt Medal being awarded for a bloom of Frau K. Druschki.

Table decorations were rather numerous, and showed good taste generally. Hardy cut flowers were greatly in evidence; Gloxinias were numerous and of good quality, and the same may be said of the display of Sweet Peas. There were many groups of various dimensions and these were pleasing in arrangement.

Begonias of the tuberous-rooting section were largely shown, and among them were exhibits showing good cultivation. Mr. MARTIN, gardener, Shirley Lodge, and Mr. SLATER, gardener, Homedale, exhibited the best Begonias.

The fruit consisted chiefly of Royal Sovereign Strawberries of great size, and bunches of white and black Grapes.

There were seen excellent vegetables, roots, saladings, and Potatoes, mostly cottagers' produce. The society assists greatly in forwarding the cultivation of vegetables in and around the town, and with admirable results.

Non-competitive exhibits from the trade were of much interest.

GLOUCESTERSHIRE ROSE.

JULY 9.—The 19th annual exhibition of this Society was held in the Corn Exchange, Gloucester, on this date. The entries totalled 192, as against 190 last year, and, notwithstanding the wetness and backwardness of the season, the quality of the blooms was excellent.

The cottagers' classes were a marked and encouraging feature of the show, both in point of view of number of entries and the quality and variety of the blooms shown. A new class for cottagers—three vases, any varieties, six blooms in each vase—secured a goodly number of entries.

In the nurserymen's classes the chief prizes fell to Messrs. ALEX. DICKSON & SONS, LTD., Newtownards; Mr. JOHN MATTOCK, Oxford; Mr. HENRY DREW, Longworth, Berks; Messrs. G. PRINCE & Co., Longworth; and Messrs. JOHN JEFFERIES & SON, Cirencester.

In the open amateur classes Mr. CONWAY JONES, of Hucclecote (who was a strong competitor for the champion trophy at the recent National Rose Society's show), secured all the first prizes, and was also awarded the N.R.S. silver medals for the best hybrid perpetual bloom, and for the best tea bloom in the varieties Mrs. John Laing and Mrs. Edward Mawley respectively.

In the Gloucestershire amateur classes, in which Mr. Conway Jones did not compete, Mr. W. J. THORPE, of Hucclecote, won a silver cup presented by Messrs. Jefferies & Son, Cirencester, for 18 varieties of Roses.

In the City of Gloucester amateur classes Mr. W. H. PICKFORD was awarded a silver salver, presented by the Mayor and Corporation, for the best display of Roses and Rose foliage only. Mr. A. V. WRIGHT won the Corporation triple Rose bowl for a display of Roses, and he also won the City High Sheriff's piece of plate for six varieties. Mr. W. H. PICKFORD was awarded the N.R.S. silver medal for the best hybrid Tea Rose in a bloom of Mildred Grant.

In the cottagers' classes, Mrs. BOLTON, Gloucester, was awarded a clock, presented by Mr. H. Terrell, K.C., for six Roses.

SOUTHAMPTON ROYAL HORTICULTURAL.

JULY 2 & 3.—The summer exhibition of this Society was held on these dates in the County Cricket Ground. The show was a great success, the exhibits being more numerous than usual and their quality good.

Roses.—Nineteen classes were provided for Roses, the principal one being that for forty-eight blooms of distinct varieties. Four growers competed in this class, and the 1st prize was won by Messrs. B. R. CANT & SONS, Colchester, with medium-sized well-coloured examples, of which the following were especially noticeable:—Mildred Grant (this was the premier bloom of the show), A. K. Williams, Helen Keller, Comte de Raimbaud, Dean Hole, Mme. Jules Gravereaux, and Richmond. 2nd, Messrs. D. PRIOR & SONS, Colchester, with slightly smaller flowers. Messrs. B. R. CANT & SONS also won the premier place for twelve triplets, with similar examples to those in the preceding class. 2nd, Messrs. F. CANT & Co., Braiswick Nurseries, Colchester.

Exhibits in a class for Tea or Noisette Roses in twelve distinct varieties were not numerous, but of high quality. Messrs. G. PRINCE & Co., Longworth, Faringdon, won the 1st prize with flowers of high merit, including such kinds as Mrs. E. Mawley, Boadicea, Princess Beatrice, Mme. Jules Gravereaux, and Innocente Pirola. 2nd, Messrs. F. CANT & Co.

Messrs. B. R. CANT & SONS won in the class for six blooms of any dark variety, with handsome, if small, examples of Richmond. Messrs. G. PRINCE & Co. won in a similar class for light-coloured blooms with Frau Karl Druschki.

Messrs. PRINCE & Co. also won easily in the class for garden or decorative Roses, with examples of Rainbow, Lady Battersea, Tea Rambler, Una, Climbing Papillon, &c., and for six bunches of single-flowered varieties.

A silver Challenge Cup, open to gentlemen's gardeners and amateurs, was offered for eighteen distinct Roses. This coveted award was secured by Mr. H. W. RICHARDS, Westridge, Ryde, with an exceedingly fresh, well-coloured set of popular varieties.

Tea or Noisette varieties were well shown in this section by Mr. F. W. FLIGHT, Cornstiles, Twyford, Winchester: The Bride, Bridesmaid, Mrs. E. Mawley, Maman Cochet, and Muriel Graham were some of his best blooms. Miss MINNIE SNELLGROVE, 10, Oxford Road, Southampton, worthily won the premier position for the best-arranged basket of Roses.

Sweet Peas were very finely and numerous shown in the many classes that were provided for these flowers. For fifteen bunches, distinct, the National Sweet Pea Society offered Gold and Silver Medals as the 1st and 2nd prizes. Mr. C. W. BREADMORE, Winchester, won easily with excellent bunches; 2nd, Mr. H. H. LEES, Warlington Cottage, Havant.

In the class for six bunches, the prizes for which were given by Messrs. Toogood & Sons, Southampton, Mr. Usher (gr. to Sir R. BAKER, Brantson, Blandford) was successful with good blooms well staged.

Hardy cut flowers were a feature of the show. Messrs. LADHAMS, Shirley, Southampton, won easily in the class for twelve bunches with a choice collection.

Messrs. PERKINS & SON, Coventry, showed the best bridal and the best ball bouquets.

Exhibits of plants were numerous and good. Mr. Hill (gr. to G. MERCER, Esq., Bassett, Southampton) had a highly-interesting group of miscellaneous plants arranged for effect, for which he secured the leading award.

Fruit was not plentiful, but it was good in quality. Mr. G. Ellwood (gr. to W. H. MYERS, Esq., Swanmore House, Bishop's Waltham) won in the classes for two bunches of black Grapes, and for one Melon. Mr. H. C. SIVYOUR (gr. to C. H. FARMAN, Esq., Rownhams House, Southampton) showed the best white Grapes in his bunches of Foster's Seedling.

Vegetables were very extensively displayed, and as many as 17 competitors were seen in a class for six dishes, and in which Mr. H. Pearce (gr. to Mrs. TRAGETT, Awbridge Danes, Romsey) won the 1st prize with a high-class exhibit. Messrs. Toogood and Sons, Southampton, presented the prizes in this class.

Messrs. Sutton & Sons, Reading, offered prizes for six dishes of vegetables, and this class provided a stiff competition. Mr. E. Beckett (gr.

to Lord ALDENHAM, Aldenham House, Elstree) won with produce of high quality. Mr. ELLWOOD followed closely. The last-named exhibitor won in the class in which prizes were given by Messrs. J. Carter & Co., High Holborn, London.

Trade exhibits were numerous, and they added much to the displays of the show. Mr. C. W. BREADMORE, Winchester, arranged eighty bunches of Sweet Peas in first-class style.

Messrs. DOBBIE & Co., Rothesay, also had a fine display of these popular flowers.

Mr. DUTTON, Iver, Bucks, showed Carnations of good quality, and Mr. BURNETT, St. Margaret's Nurseries, Guernsey, also showed fine blooms of these flowers.

Messrs. B. LADHAMS & SON, Shirley, had herbaceous flowers in much variety.

Messrs. ROGERS & SON, Southampton, showed Roses, shrubs, &c.

HANLEY FLORAL FETE.

JULY 3, 4.—This annual exhibition was held on these dates, and although the number of entries was somewhat smaller than at last year's display, the function proved a success. It was, perhaps, unfortunate that the show followed so closely upon that at Lincoln, for it undoubtedly prevented some growers from competing who would otherwise have done so. For this reason there were fewer entries in the group, Orchid,



THE LATE CHAS. JORDAN, I.S.O.

and Carnation classes, and the tent devoted to this section was in consequence not so well filled as it has been in some recent years.

The 1st prize for a group of plants occupying an area of not more than 300 square feet was secured by Mr. W. A. HOLMES, Chesterfield; 2nd, Messrs. J. CYPHER & SONS, Cheltenham. The best group of Orchids was shown by this latter firm.

Lord GROSVENOR, Tittensor Chase, Stoke-on-Trent (gr. John Scotney), exhibited the best group of Carnations in pots, and he was followed by Lord SHREWSBURY, Ingestre, Stafford (gr. Mr. E. Gilman).

In the class for 72 blooms of Roses of distinct varieties, the 1st prize was awarded Messrs. R. HARKNESS & Co., Hitchin, and this firm also won the 1st prize for 48 blooms, and 1st prizes in six other classes for these flowers.

The best collection of hardy flowers was shown by Messrs. G. GIBSON & Co., Leeming Bar, Bedale.

In the classes for fruits and vegetables, the principal prize-winners were the Earl of HARRINGTON, Elvaston Castle (gr. Mr. J. H. Goodacre); Earl of LONDENBOROUGH, Market Weighton (gr. Mr. J. C. McPherson); Earl of CARNARVON, Highclere Castle, Berkshire (gr. Mr. Pope); and Lord BAGOT, Blithfield, Rugeley (gr. Mr. Thos. Bannerman).

BIRMINGHAM BOTANICAL AND HORTICULTURAL.

JULY 3.—The exhibition at the Edgbaston Botanical Gardens on this date was a good one, but the weather was cold and wet. Two Silver-Gilt, two Silver, and two Bronze Medals were awarded. No awards were made to novelties.

The Rt. Hon. J. CHAMBERLAIN, M.P., Highbury, Birmingham (gr. Mr. J. Deacon), furnished nearly 300 square feet near the end of the exhibition hall with a beautiful group of flowering plants, consisting of varieties of Souvenir de la Malmaison and American Tree Carnations, Regal and Zonal Pelargoniums and Clerodendron fallax. Of the "Malmaison" Carnations, Princess of Wales (pink), H. J. Jones (deep crimson), Nautilus, and Sault were particularly good. The whole exhibit was well arranged. (Silver-Gilt Medal.)

Messrs. JAMES RANDALL & SONS, Shirley, Birmingham, showed a large group of cut flowers of American Tree Carnations and retarded Lilies of the Valley intermingled with foliage and miscellaneous flowering plants. (Silver-Gilt Medal.)

C. F. PRICE, Esq., Chad Mont, Edgbaston (gr. Mr. J. Beasley), sent a number of plants of Hydrangea Hortensia. (Vote of Thanks.)

Messrs. BAKERS, Wolverhampton and Codrall, sent a collection of Sweet Peas, including several new seedlings. (Bronze Medal.)

The most representative and best-arranged group of hardy flowers came from Mr. C. H. HERBERT, Acocks Green, who had large clumps of Heuchera macrantha, Gypsophila paniculata fl. pl., Pyrethrum James Kelway (flowers rich crimson), Delphiniums, Alpine species of Dianthus, and many uncommon rock-garden plants. (Silver Medal.)

R. FENWICK, Esq., Edgbaston, contributed a few well-flowered plants of Odontoglossum crispum. (Vote of Thanks.)

Mr. ROBT. SYDENHAM, Tenby Street, Birmingham, staged two dozen vases of Sweet Peas, and the same number of vases of Spanish Irises. (Silver Medal.)

From Messrs. RICHARD SMITH & Co., Worcester, came a nice collection of Pæonies and miscellaneous border flowers. (Bronze Medal.)

R. WILSON KING, Esq., Edgbaston (gr. Mr. D. Johnson), sent a small group of Gloxinias and foliage plants. (Vote of Thanks.)

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JULY 4.—*Committee present:* Messrs. Ashworth, Ward, Smith, Cowan, Sander, Warburton, Leemann, Keeling, Walmsley, and Parker.

A. WARBURTON, Esq., Haslingden, staged a good group, consisting of Cattleyas, Odontoglossums, and some well-grown plants of Odontoglossum vexillarium. Lælia tenebrosa, var. Victor, was also included in the group. It is a beautiful variety with yellow sepals and petals. (Silver medal.)

Messrs. KEELING & SONS staged a small group of interesting plants, which included a fine plant of Stanhopea bucephalus; there were also some distinct varieties of Masdevallia in this group which was awarded a bronze medal. An Award of Merit was given to a new hybrid Cypripedium.

H. J. BROMILOW, Esq., Rainhill, exhibited Cypripedium Godefroyæ "Ran Lea var."

E. D. BOSTOCK, Esq., Stone, exhibited a good variety of Cypripedium niveum, var. "Supreme." P. W.

Obituary.

CHARLES JORDAN, I.S.O.—In our last issue we briefly announced the death of this distinguished gardener, which occurred at New Lodge, Hyde Park, on the 8th inst. The late Mr. Jordan commenced his horticultural training in the gardens of Baron Pollock, Hatton House, Hounslow, in 1860, and two years later he entered the gardens at Syon House. From Syon House he proceeded to Floors Castle, Kelso, and from thence, in 1868, became foreman in the gardens of Claude B. Hamilton, Esq., at Dalkeith, subsequently entering into business for himself as a nurseryman at Isleworth. He relinquished this business to assume control of the public parks

of Greenwich and Victoria. When the management of the latter was transferred by the Metropolitan Parks Act, 1887, to the Metropolitan Board of Works, the late Mr. Jordan was given the post of superintendent of Regent's Park, which office he held until his appointment in February, 1903, to the superintendence of Hyde Park, rendered vacant by the retirement of Mr. William Brown. The late Mr. Jordan was one of the ablest of park superintendents; he was most zealous in the discharge of his duties, and the vast amount of work he accomplished was remarkable. The post of superintendent of London's chief park involves the management of Kensington Gardens, St. James's Park, Buckingham Palace Gardens, the Green Park, Marlborough House Gardens, Parliament Square, and many minor gardens attached to public offices, and the present condition of each of these open spaces testifies to the skill and management of their late director. The new range of glasshouses and propagating pits in Hyde Park were designed by the late Mr. Jordan, and they will remain a monument to his capability. The many fine avenues in both the Green Park and the Mall, which serve as vistas leading to the national monument to Queen Victoria are also the result of the late Mr. Jordan's labours. During the 16 years he was superintendent of Regent's Park, he converted it into a veritable flower garden, and he added dells and water gardens, and other attractive features. The glass and nursery departments were entirely remodelled under his guidance, and the frame ground of this park was his especial pride. The late Mr. Jordan's nature was one of extreme kindness, and he was beloved by all whose pleasure it was to serve under him, as the present writer can testify. The investiture of the Imperial Service Order so recently conferred by the King was to have taken place on the 15th inst. Deceased leaves a widow, but no family.

LOUIS LACROIX.—We have to record the death of M. Louis Lacroix, who was once a well-known raiser of Chrysanthemums. Soon after the year 1880, when the popularity of the Chrysanthemum was advancing by rapid strides, M. Lacroix enriched our collections by introducing some excellent novelties from his nursery at Toulouse. Among them may be remembered such flowers in the Japanese section as *Dormillon*, *Mdlle. Lacroix* (a popular white flower), *Roi des Japonais*, *Tendresse*, *M. Ardene*, *M. Brunet*, *Mdlle. Moulis*, *Parasol*, *Mdlle. Marie Hoste*, and several others, not the least important of which were *Phœbus* and *Vivand Morel*, two varieties that continued for many years to be regarded as good exhibition flowers. *Jeanne d'Arc*, an incurved flower of great merit, was also sent out by M. Lacroix, as were several interesting Japanese-Anemone varieties, of which *Fabian de Mediana* was a conspicuous example. M. Lacroix was 66 years of age at the time of his death. C. H. P.

JOSEPH EWING.—We regret to hear, through our correspondent, Mr. Jno. Forbes, that this well-known gardener died about a fortnight ago at Strathtay, near Aberfeldy, in his 90th year. The late Mr. Ewing was gardener at Castle Menzies, Aberfeldy, for a period of 60 years. A few years ago he retired from the active management of the gardens and was succeeded by his son James, but continued to reside at Castle Menzies until May last.

DEBATING SOCIETIES.

BATH AND DISTRICT GARDENERS'.—The annual outing of this association took place recently, when a visit was made to Bournemouth. The weather fortunately was fine. The central and other local parks were visited by some members of the party, and others made a trip to Boscombe to visit the nurseries of Mr. M. Prichard, Christchurch.

BRIXTON, STREATHAM AND CLAPHAM HORTICULTURAL.—Through the kindness of Messrs. Sutton & Sons an opportunity was afforded the members on July 3 of visiting their nurseries at Reading. The trials of Peas and Lettuces were instructive. The copious rains have been favourable to both these crops. The breadths of annuals were interesting. *Nemesia strumosa* was seen in almost endless shades of colour. W. Roupell.

MARKETS.

COVENT GARDEN, July 17.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—E.D.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Alstromerias, per dozen bunches	2 0	4 0	Mignonette, per doz.	3 0	4 0
Anemones, per doz. bunches	3 0	4 0	Myosotis, per doz. bunches	1 6	2 0
Bouvardia, per doz. bunches	2 0	3 0	Odontoglossum crispum, per dozen blooms	2 0	2 6
Calla æthiopica, p. dozen	1 6	2 6	Pæonies, per doz. bunches	4 0	8 0
Carnations, per dozen blooms, best American various	1 6	3 0	Pancratium, per dozen fls.	3 0	4 0
— smaller, per doz. bunches	9 0	12 0	Pelargoniums, show, per doz. bunches	4 0	6 0
— Malmays, p. dozen blooms	6 0	10 0	— Zonal, double scarlet	4 0	6 0
Cattleyas, per doz. blooms	10 0	12 0	Pinks	1 0	3 0
Coreopsis, per doz. bunches	2 0	3 0	Poppies, Iceland, Jor. bunches	4 0	8 0
Cornflowers, per doz. bunches	2 0	3 0	— Oriental	4 0	8 0
Eucharis grandiflora, dz. blms.	2 0	3 0	— Shirley	2 0	3 0
Gardenias, per doz. blooms	2 0	3 0	Pyrethrums, per dozen bunches	2 0	4 0
Gladiolus, The Bride, per doz. bunches	3 0	5 0	Ranunculus, per dozen bunches	4 0	6 0
— Brechtleyensis	4 0	8 0	Rhodanthe, per doz. bunches	3 0	4 0
— various	4 0	9 0	Roses, 12 blooms, Niphetos	1 0	3 0
Gypsophila elegans p. dz. bunches	2 0	3 0	— Bridesmaid	2 0	3 0
Iris, German, per doz. bunches	4 0	6 0	— C. Testout	2 0	3 0
— Spanish, p. dz. bunches	4 0	9 0	— General Jacquemont	0 6	1 0
Lapageria alba, dz. 10 1 6			— Marechal Niel	1 6	3 0
Lilium auratum	2 0	3 0	— Mrs. J. Laing	1 0	3 0
— candidum, bch.	1 0	2 0	— C. Mermet	1 0	3 0
— lancifolium, rubrum and album	1 6	2 0	— Liberty	2 0	4 0
— longiflorum	2 0	3 0	— Mad. Chateaufort	1 0	3 0
Lily of the Valley, p. dz. bunches	6 0	9 0	Statice, per dozen	3 0	4 0
— extra quality	10 0	15 0	Stephanotis, per dozen trusses	3 0	5 0
Marguerites, white, p. dz. bunches	2 0	3 0	Stocks, per dozen bunches	3 0	4 0
— yellow, per dz. bunches	1 6	2 0	Sweet Peas, p. doz. bunches	1 0	3 0
			Sweet Sultans, per dozen bunches	3 0	4 0
			Tuberose, per dz. blooms	0 4	0 6

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Adiantum cuneatum, per dozen bunches	4 0	6 0	Galax leaves, per dozen bunches	2 0	2 6
Asparagus plumosus, long trails, per doz. bunch	8 0	12 0	Hardy foliage (various), per dozen bunches	2 0	6 0
— medium bunch	1 6	2 0	Ivy-leaves, bronze long trails per bundle	1 6	3 0
— Sprengeri	0 6	1 0	— short green, doz. bunches	2 0	3 0
Berberis, per doz. bunches	2 0	2 6	Moss, per gross	4 0	5 0
Croton leaves, bch.	1 0	1 6	Myrtle (English), small leaved, doz. bunches	4 0	6 0
Cycas leaves, each	1 6	2 0	— French, dozen bunches	1 0	1 6
Fern, English, per dozen bunches	1 0	2 0	— Smilax, p. dz. trails	1 6	2 6
— French, dozen bunches	1 0	3 0			

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Ampelopsis Veitchii, per dozen	6 0	8 0	Erica ventricosa, per dozen	18 0	30 0
Aralia Sieboldii, dz. 4 0 6 0			Euonymus, per dz.	4 0	9 0
— larger	9 0	12 0	Ferns, in thumbs, per 100	7 0	10 0
Araucaria excelsa, per dozen	12 0	30 0	— in small and large 60's	16 0	25 0
Aspidistras, green, per dozen	18 0	30 0	— in 4's, per dz.	4 0	10 0
— variegated, dz. 30 0 42 0			— in 32's, per dz.	10 0	18 0
Asparagus plumosus nanus, doz.	9 0	12 0	Ficus elastica, doz.	8 0	10 0
— Sprengeri, dz.	9 0	12 0	— repens, per doz.	4 0	6 0
— tenuissimus, per dozen	9 0	12 0	Heliotropium, per dozen	3 0	4 0
Boronia megastigma, per dz.	12 0	30 0	Hydrangea Thos. Hogg, per doz.	12 0	18 0
— heterophylla	12 0	24 0	— Hortensia, per dozen	8 0	12 0
Calceolarias, yellow	4 0	8 0	— paniculata, per dozen	12 0	30 0
Campanulas, p. dz.	6 0	9 0	Kentia Belmoreana, per dozen	12 0	18 0
Clematis, per doz.	8 0	9 0	— Fosteriana, p. dozen	12 0	21 0
— in flower	12 0	18 0	Kochia scoparia, per dozen	6 0	9 0
Cocos Weddelliana, per dozen	9 0	14 0	Lantana borbonica, per dozen	12 0	18 0
Coleus, per dozen	2 0	4 0	Lilium longiflorum, per dz.	12 0	24 0
Coreopsis, per doz.	6 0	10 0	— lancifolium, per dozen	12 0	18 0
Crassula (Kalm's), per dz.	9 0	12 0	Lily of the Valley, per dozen	10 0	12 0
Croton, per dozen	12 0	30 0			
Cyperus alternifolius, dozen	4 0	5 0			
— laxus, per doz.	4 0	5 0			
Dracænas, per doz.	9 0	24 0			
Erica Cavendishii, per dozen	24 0	36 0			

Plants in Pots, &c.: Average Wholesale Prices (Contd.)

	s.d.	s.d.		s.d.	s.d.
Lobelia, per dozen	5 0	6 0	Petunias, double, per dozen	4 0	8 0
Marguerites, white, per dozen	4 0	8 0	— single, per dz.	3 0	6 0
— yellow	12 0	18 0	Rhodanthe, per dz.	4 0	6 0
Mignonette, per dz.	6 0	9 0	Roses, H.L.'s, per dozen	12 0	24 0
Musk, per dozen	4 0	5 0	— Rambles, each	5 0	21 0
Pelargonium, Ivy-leaved, Mde. Crousse and Galilee, p. dozen	4 0	6 0	Saxifraga pyramid. alis, per dozen	12 0	18 0
— Zonal, per dz.	4 0	6 0	Selaginella, dozen	4 0	6 0
— show	6 0	9 0	Spiræa japonica, dz.	5 0	8 0
			Verbena, Miss Willmott, doz.	6 0	9 0

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples, per box, Tasmanian	8 6	9 0	Grapes, Alicante, per lb.	0 9	1 3
— London Pippins	6 6	7 6	— Gros Maroc, per lb.	0 9	1 6
— Scarlet Pearmain	7 0	8 0	— English Muscats, per lb.	1 0	3 0
— Scarlet Nonpareils	6 0	7 0	— Belgian Hambro's, per lb.	0 8	1 3
— Sturmer Pippins	6 0	7 0	Lemons		
— French Crabs	6 0	7 0	— Messina, case	10 0	14 0
— Prince Alfreds	6 6	7 6	— Naples, p. case	20 0	25 0
— Alfristons	7 0	7 6	Lyches, per box	1 0	—
— Australian, box	7 0	9 0	Mangoes, per doz.	9 0	18 0
— Monro's Favorite, per box	7 0	9 0	Melons (Guernsey), each	0 9	2 0
— Roman Beauty	7 0	9 0	— French, Rock, each	2 0	3 6
— Cleopatra	7 0	9 0	— Valencia, per case	8 6	10 0
— Jonathans	10 0	11 0	— Canteloupe, each	0 4	0 5
— New York Pippins	7 0	9 0	Nectarines (English), per doz.	3 0	12 0
— Five Crowns	6 6	7 0	Nuts, Cobnuts, per doz. lb.	2 6	3 0
— Rymers	6 0	7 0	— Almonds, bags	54 0	—
Apricots (French), per box	1 2	1 4	— Brazils, bags, per cwt.	40 0	42 6
— French, cases	2 6	3 6	— Barcelona, bag	32 6	—
— French, ½ sieve	5 0	5 6	— Cocoanuts, 100	12 0	17 0
Bananas, bunch	5 0	—	Oranges, per case	16 0	35 0
— No. 2 Canary	5 6	6 0	— Valencia	10 0	10 6
— No. 1	6 6	7 6	— Navels	12 0	16 0
— Extra	8 0	—	— Murcia, box	12 0	16 0
— Grants	5 0	5 6	Peaches (English), per dozen	1 0	9 0
— Jamaica	0 9	1 3	— French, p. box	1 0	1 3
Cherries (English), ½ sieve	3 6	12 0	Pears (Australian), per bundle of 3 boxes	10 0	20 0
— ¾ sieve	2 0	6 6	Plums (French), p. box	0 10	1 0
— French, ½ sieve	4 0	8 0	— Italian, basket	2 0	2 3
— French, ¾ sieve	3 0	1 6	Gages (French), per box	1 4	1 9
Cranberries, case	8 0	8 6	— French, ½ sieve	11 6	12 6
Currants (English), Red, ½ sieve	2 6	3 6	Pineapples, each	2 0	3 6
— French, black, ½ sieve	4 6	5 0	Raspberries (English), basket	1 3	1 6
— Black (English), ½ sieve	5 6	6 0	Strawberries (English), per peck	1 9	3 0
— White, p. peck	2 9	3 0	— per lb.	0 3	0 3
Dates (Funi), doz. boxes	2 6	—	— English, per handle basket	0 9	1 0
Figs (Guernsey), p. dozen	1 0	4 0			
Gooseberries (English), ½ sieve	1 6	4 0			
Grape Fruit, case	19 0	22 0			
Grapes (English), Hambro's, p. lb.	0 8	1 3			

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes (French), per dozen	2 0	2 6	Mushrooms (house), per lb.	0 8	10 0
Asparagus (English), p. bundle	0 9	1 3	— buttons, per lb.	0 10	—
— Beans (French), per pad	5 0	8 0	— "Broilers" p. lb.	0 5	0 6
— Broad (English), p. bushel	3 0	—	Mustard and Cress, per dozen pun.	1 0	1 6
— Jersey, per lb.	0 6	—	Onions (Lisbon), case	7 6	8 0
— French, packet	0 8	0 4	— pickling, per bushel	2 0	2 6
— Home-grown, per lb.	0 6	—	— Spring, pr. dz. bunches	1 6	2 0
Beetroot, bushel	13 1 6	—	— Egyptian, bag	9 0	10 0
Cabbages, per doz.	0 9	1 0	Peas (English), per bushel	1 6	2 6
Cabbage Greens, bag	1 0	1 6	— English, p. bag	3 0	5 0
— red, per dozen	2 0	—	Parsley, 12 bunches	1 6	2 0
Carrots (English), dozen bunches	1 0	1 6	— ½ bushel	1 0	1 6
— French, new, per bunch	0 5	—	Potatoes (Canary), per cwt.	8 0	9 0
Cauliflowers, per dozen	2 0	2 6	Radishes (Guernsey), per dozen	0 4	0 6
Chow Chow (Sesquipedale), p. dozen	3 0	—	Rhubarb (English), natural, per dz.	1 0	1 6
Cucumbers, per dozen	1 6	2 6	Salsafy, p. dz. bdls.	3 6	—
Endive, per dozen	1 0	1 3	Spinach, English, per bushel	0 9	1 0
Horseradish, foreign, 12 bdls.	13 1 6	—	Tomatoes		
Lettuce (English), Cos, per score	0 4	0 6	— Canary, per bundle	6 0	8 0
Marrows (English), per dozen	3 0	6 0	— selected, per dozen lbs.	3 6	3 9
Mint, per dozen bunches	0 9	1 0	— small selected, per dozen lbs.	3 0	3 3
			Turnips (English), doz. bunches	2 0	3 0
			Watercress, per doz. bunches	0 4	0 6

REMARKS.—English Tomatoes are arriving in increasing quantities and are considerably cheaper. Cherries are sold at low prices, except very superior varieties. The trade for Hot-house Grapes and Peaches continues to be very quiet. Strawberries generally are now of poor quality and supplies are nearly finished. P. L., Covent Garden Market, July 17, 1907.

POTATOES.

Kents, 5s. 6d. to 7s.; Bedfords, 5s. to 5s. 6d.; Lincolns, 5s. 6d. to 6s.; Jerseys, 5s. 6d. to 6s.; St. Malos, 6s.; Teneriffe, 9s. to 10s.; old Potatoes, 6s. 6d. to 7s. Large consignments of Potatoes have been received during the past week, and prices have dropped accordingly. Trade generally is good. A. B., Covent Garden, July 17, 1907.

COVENT GARDEN FLOWER MARKET.

Many growers of spring and summer flowering plants have finished marketing these for the season, and some few things are realising good prices. Generally, however, plants are plentiful and the prices are low. Zonal, Ivy-leaved, and Show Pelargoniums are all plentiful. Amongst the best of *Crassula* (*Kalosanthes*) *coccinea* is the variety *Phoenix*; some of the cross-bred varieties of this plant are also good. Fuchsias are seen in well flowered plants. *Companula* *Mayi*, well flowered, is noticed on the plant stands. Supplies of *Hydrangeas* are falling off a little, but there are many good plants of *H. paniculata grandiflora*. *Koechia scoparia*, or what is known by some persons as *K. trichophylla*, is now very good. In *Roses* I noticed well flowered plants of the variety *Hiawatha*; other *Rambling* varieties are plentiful, but the plants are chiefly those that have been grown in the open and afterwards potted. *Coleus* in well coloured plants are plentiful, but there is only a small demand. I noticed some well grown plants of *Fu'ala japonica* variegata from Mr. T. Child's nursery. Ferns, *Palms*, *Aspidistras*, *Asparagus*, *Ficus*, *Aralias*, *Pandanus*, *Crotons*, and other useful foliage plants are all well supplied.

CUT FLOWERS.

White, yellow and blue flowers of *Statice* are prominent. *Alströmérias* are seen in various shades of colours. Iceland and Shirley Poppies are still very pretty. Several growers send these flowers when in the bud state; they open well in water, and last much longer than flowers that are fully expanded when cut. Spanish and English *Irises* are prominent flowers, these also last much longer if they are cut before they have fully opened, and the same is the case with many other flowers. Some *Carnations* have a reputation for remaining fresher longer than others, but the only difference I have ever been able to detect is that those which are the more readily fertilised deteriorate the quicker. This is seen in the case of the *Marguerite* varieties which seed freely, for these flowers pass as soon as fertilisation takes place. Sweet Peas have been over plentiful, and there must have been much waste in these flowers. *Roses* vary, the best sell well, but many of lesser quality cannot be cleared other than very cheaply. *Souvenir de la Malmaison* *Carnations* are prominent. The American varieties quite eclipse our ordinary type. *Liliums* have advanced a little in prices. The market is well supplied with all seasonable flowers and prices are, generally, very low. A. H., Covent Garden, Wednesday, July 17, 1907.

ANSWERS TO CORRESPONDENTS.

APPLE LEAVES: Rev. G. H. E. There is no disease present. The blotches are caused by a deposition of moisture followed by a chill.

APPLE SPOT: G. R. The markings are caused by a fungus, *Fusicladium dentriticum*. Spray the trees now with the Bordeaux Mixture (half strength), and again in the winter with a solution of sulphate of iron.

ASTER DISEASE: F. E. S. & Co. Select fresh ground for next year's planting, and take the precaution to spray the plants, before the disease appears, with the fungicide recommended in our issue for June 22, p. 416. The disease may be transmitted by the seeds, but this is improbable; fresh seeds, however, obtained from a healthy stock should be used for next year's sowing. If you do not wish to do this, treat the seeds from the affected plants with a weak solution of permanganate of potash in order to kill any spores of the fungus that may be present on them.

BOOK: J. F. Holstein. "Windsor Park and Forest"; published by Oxley & Son, High Street, Windsor.

BRITISH GARDENERS' ASSOCIATION.—W. F., Northallerton. The secretary is Mr. John Weathers, Talbot Villa, Talbot Road, Isleworth.

CAMELLIA LEAVES: W. H. P. The injury is caused by *Pestalozzia Guepini*, the dreaded "grey blight" of the Tea plant, which often attacks Camellias. The only certain remedy is to cut off every diseased leaf, as the spores are spread from one leaf to another by syringing the plants.

COLOURED PLATES: W. T. A., Capetown. We are unable to tell you where you could obtain the kind of plates you require.

CUCUMBER DISEASE: Old Subscriber. The leaves are affected with the spot disease that has been so often described in these columns. You can check the spread of the complaint by spraying with liver of sulphur, $\frac{1}{2}$ oz. to 2 gallons of water. All diseased plants should be burned and fresh soil should be used for future planting.

CUCUMBER PLANT: E. T. There is not any evidence of eelworms in the roots received. If you are a Fellow of the Royal Horticultural Society, you can have the water analysed on payment of a small fee, by sending a sample to Dr. J. Augustus Voelcker, M.A., 22, Tudor Street, New Bridge Street, London, E.C. The splitting of the Grapes is due to some fault in the regulation of heat and moisture, particularly in respect to the water applied to the roots.

ELM LEAVES: L. G. The fungus on Elm leaves is *Phyllachora Ulmi*, a parasite causing the early fall of the leaves when present in quantity.

GRAPE SPOT DISEASE: F. G. B., W. W. W. S., and North Essex. The berries are affected with the spot disease, which is caused by a fungus *Glæosporium ampelophagum*. Dust the bunches with a mixture of one part quicklime and two parts of flowers of sulphur. The use of stable manure in the border favours the disease.

HOLLYHOCK DISEASE: C. The following preparation is recommended by Messrs. Webb and Brand, the well-known cultivators of this flower:—To 1 lb. of Tobacco powder add $\frac{1}{2}$ oz. of finely-powdered sulphate of copper; well mix these, and dust the undersurfaces of the foliage with the mixture, at intervals of two or three weeks during the growing season, choosing a dull day with a still atmosphere for carrying out the operation.

EXHIBITING VEGETABLES: W. T. We know of no standard size for a stand to exhibit a certain number of vegetables, and you must be guided by your own discretion in this direction. It is necessary to afford sufficient space between the individual varieties to allow them to be displayed to advantage. A suitable stand for exhibiting vegetables is shown at fig. 21 (A) the back. (The diagram does not show this back as high as it is usually seen, but the exhibitor can modify the height as required). The back can be made of light boarding, and in front is a square portion (B) upon which the boards forming (C) rest, and slope to the front. The boards forming the platform (C) often meet (B) about three parts up, and not quite at the top, as is shown in our diagram. Against (A) are usually placed

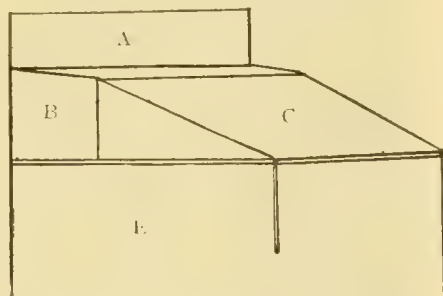


FIG. 21.—STAND FOR EXHIBITING VEGETABLES.

Cauliflowers, Cabbages or Broccoli in pyramids, with Marrows, Cucumbers and similar large vegetables on (B). The space (C) is usually reserved for dishes containing Tomatoes, Mushrooms, Capsicums, Potatoes, &c., with the larger subjects at the back. A bedding of Parsley is placed over the whole staging before arranging the vegetables. The table (E), upon which the stand rests, is represented by the three bottom vertical lines in the diagram.

NAMES OF FRUITS: Peach. The fruits were not packed with sufficient care, and they suffered badly during transit. Correspondents would do well to remember that such soft fruits can only be identified with difficulty, and it is therefore imperative that every care should be taken in the packing of them, and that it is necessary for us to receive two fruits of each variety, also specimens of the foliage.

NAMES OF PLANTS: A. J. *Polygonum cuspidatum*.—W. H. and A. K. We do not undertake to name varieties of *Roses* or other florists' flowers.—C. W. *Calycanthus floridus*.—R. A. H. 1, *Spiræa arizæfolia*; 2, *Rhus Cotinus*; 3, *Cistus ladaniferus maculatus*; 4, *Erigeron speciosus*.—F. R. 1, *Escallonia rubra*; 2 and 3, *Rosa spinosissima* var.; 4, *Veronica salicifolia*; 5, *Azalea viscosa*; 6, *Coronilla Emerus*.—A. T. B. *Jasminum humile* (J. revolutum).—A. C. 1, *Picea nigra*; 2, *Cephalotaxus pedunculata*; 3, *Berberis vulgaris* var.; 4, send better specimen.—W. J. S. 1, *Robinia Pseudacacia*; 2, *Cupressus Lawsoniana*; 3, *C. macrocarpa*; 4, *Pinus excelsa*.—G. F. M. 1, *Rhodotypos kerrioides*; 2, *Lonicera Ledebourii*; 3, *Philadelphus Lemoinei*; 4, *Olearia Gunniana*; 5, *Gaultheria Shallon*; 6, *Verbasicum phoeniceum*.—A. N. 1, *Eunonymus europæus*; 2, *Rhus Cotinus*; 3, *Veronica salicifolia*; 4, *V. speciosa*

var.—G. B. 1, *Lonicera japonica*; 2, *Crambe* sp., probably *C. orientalis*, but we are unable to name it definitely without complete material.—K. & B. The *Retinospora*, or juvenile form of *Juniperus virginiana*.—G. W. R. *Potentilla variabilis*, *P. coccinea* of gardens.—R. A. 1, *Cystopteris bulbifera*; 2, *Lastrea dilatata*; 3, *Polypodium vulgare cambricum*; 4, *Pteris arguta*; 5, *Pteris umbrosa*; 6, *Woodwardia orientalis*.—Veritas. 1, *Aerides odoratum*; 2, *Sarcanthus pugioniformis*; 3, *Saccolabium ampullaceum*; 4, *Schomburgkia tibicinis*.—R. T. S. 1, *Kalmia latifolia*; 2, *Prunus Pissardii*; 3, *Acer Negundo*; 4, *Aconitum Napellus*; 5, *Malva moschata*; 6, *Achillea Ptarmica flore pleno*.—A. B. 1, 2, and 3, varieties of *Iris xiphoides*, commonly called English *Iris*; 4, *Penstemon barbatus*; 5, *Deutzia crenata flore pleno*; 6, *Robinia Pseudacacia*.—Juno. *Phyllocactus crenatus*.—W. J. F. 1, *Calycanthus floridus*; 2, *Spiræa salicifolia*; 3, *Spiræa brumalis variegata*; 4, *Melanthus major*; 5, probably *Convolvulus Cneorum*. Send when in flower. 6, *Rehmannia angulata*.—Miss M. C. *Astrantia major*.—G. S. J. Your labels were nearly all detached from the specimens; the red flower is *Calycanthus floridus*, the yellow flower *Grevillea juniperina sulphurea*; 2, *Phlomis fruticosa*; 3, *Cotoneaster frigidus*.

PEAR LEAVES INJURED: A. G. L. & W. K. The injury has been caused by the Pear-leaf blister-mite. Spray the trees thoroughly with paraffin emulsion prepared by boiling together equal proportions of paraffin and soft soap. This should be thoroughly mixed with 25 times its bulk of water. Spray in the autumn and again in the early spring when the leaf buds are expanding.

PLANTS LOSING THEIR LEAVES AFTER PURCHASE: A. T. It often occurs that plants sent to market are not sold on the first day, and after they have been confined in the close atmosphere of the market-hall the leaves suffer when they are again exposed to the air and light. It is much the same with many plants used for the decoration of dwelling rooms; they may not appear to suffer at the time, but when returned to their usual position the leaves soon fall, or turn a bad colour. There is also another cause for plants purchased from the market failing in the manner described. Such plants are often fed excessively with manures, and when these are withheld they suffer. In other instances they may have been subjected to an excessive degree of forcing. We may be able to give you the names of the Poppies, *Convolvulus*, &c., in our next issue.

ROSES: J. A. There is no disease present; the trouble is caused by the weather, against which there is no remedy.—W. K. The Rose leaves are attacked by a fungus called *Actinonema rosæ*. Spray with a rose-red solution of Condy's Fluid. Collect and burn diseased leaves.

STRAWBERRIES: G. S. We are unable to account for the pilfering.

SYCAMORE: B. L. The leaf you send is that of *Corylus maxima* var. *atropurpurea*. There is no form of the Norway Maple or the Sycamore with foliage of so deep a colour, though some of the forms of the latter, such as *purpurascens* *Nizeti* are somewhat like it in early summer. There is no purple-leaved Plane, but there is a purple-leaved Elm (*Ulmus montana* var. *atropurpurea*) which you might easily have mistaken at a distance for an Acer.

TOMATOS DISEASED: J. S., Holyrood. The black spots on the fruits are caused by a fungus—*Macrosporium Solani*. There is no known remedy for this disease once the fruits are attacked, but the spread of the complaint may be largely checked by burning the affected fruits as soon as the disease shows itself. Later batches should be sprayed with the Bordeaux mixture.

COMMUNICATIONS RECEIVED.—J. D. S.—W. E. B.—W. G.—Col. Beddome—S. A. S.—T. S.—C. T. D.—A. W. S.—T. H.—C. F. C.—W. H. W.—Geo. Wassell—W. G. S.—R. Humphrey—X. Y. Z., Barnet—H. B. G., Henton—Mrs. J. L. R.—L. Castle—W. J. Vasey—J. D., New Zealand—J. I. and Son—W. E. B.—S. C.—J. E. Holden (Thanks for two shillings for R. G. O. F. Box).—P. Weathers.—O. R.—J. T. C.—W. H. F.—G. F. E.—T. M.—A. W.—Elap—W. E. M.—H. G. H.—E. B.—G. E. W.—G. B.—F. C.—R. N. (Cs. for R. G. O. F. box).—M. L.—W. H. D.—H. W.—F. P.—F. M.—E. H. J.—G. E.—W. S.—F. M. W.—E. P., Cape Town—S. C.—W. H. L.—D. J.—G. H. B.



THE

Gardeners' Chronicle

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ARRANGEMENT OF THE HARDY FLOWER BORDER.

IN undertaking the construction or rearrangement of an herbaceous border, the experienced gardener very properly aims at obtaining as prolonged a succession of colour as possible.

A well-arranged border of carefully-selected flowering plants is always a thing of beauty, but how much of that possible beauty is often sacrificed by faulty selection and disposition in the beginning? A brilliant colour display may be striking, but it is not necessarily artistic. To be artistic it must possess a certain individuality of its own, obtained by planting with a view to obtaining contrast and bold effect, and, in considering the choice of material for such a border, diversity, not only of colour, but of foliage should be taken into careful consideration. It is to the introduction of bold and effective foliage plants that the well-conceived border owes much of its artistic character.

The practice of arranging the taller plants in rows along the back, and the smaller ones

in similar rows along the front of the border, should be avoided, or the effect is sure to be monotonous. Care, however, should be taken that each plant is so disposed that it will be displayed to good advantage. The outline of a border presents an ever-varying change of front, effected by allowing the bolder subjects to project to the front and the dwarfier kinds to recede towards the back of the border at irregular intervals. Bearing these principles in mind, their employment must be regulated according to the size of the border and the purpose for which it is intended; much depends, for instance, upon whether the border is intended as a constant ornament for the more select part of the garden, or mainly for the production of cut flowers. From a border of the latter type many highly ornamental subjects must necessarily be excluded, and its effect will consequently depend largely upon the manner in which the plants are arranged. In the case of the ornamental flower border, there is a much wider scope, and few branches of gardening offer greater opportunities for the exercise of artistic skill. An important adjunct to the ornamental flower border is an effective background of flowering shrubs, in conjunction with which herbaceous plants of the boldest type can often be utilised. The outline of the shrubbery itself should be thoroughly broken up, now projecting, now receding in such a manner as to allow plenty of room for the adornment of the open spaces with suitable herbaceous plants. The position of the shrubs of which such a background is composed should be graduated in such a manner that the coarser and more spreading kinds are put well into the background. Flowering shrubs of a smaller and more select type are also valuable for planting singly, or in smaller groups among the herbaceous plants, and not only do they impart to the border much additional character during the summer months, but help to maintain that character throughout the winter, at which season they brighten what might be otherwise a more or less dreary stretch of bare ground.

However desirable the inclusion of flowering shrubs may be, it is necessary that their characteristics and uses should be thoroughly understood, otherwise the result may prove a failure. Having decided upon the position of the border, and the principles upon which it is to be planted, the selection of suitable plants that will impart an appearance of individuality comes into consideration. The following are lists of desirable subjects for the purpose:—

HERBACEOUS PLANTS OF BOLDEST TYPE.

These are only suitable for cultivation in large borders of a semi-wild character: *Bocconia cordata*, *Heracleum* in variety, *Rheum*, *Polygonum* in various species, of which *P. cuspidatum* and *P. sachalinense* are the best, *Silphium* in variety, *Lavatera*, *Grasses*, *Gynierium argenteum*, *Eulalia japonica*, *Arundo conspicua*, &c.

PLANTS OF SUB-TROPICAL APPEARANCE.

Aconitums, *Acanthus*, various species of *Astilbe* (of which the new *A. Davidii* is the best), *Centaureas* (of which *C. babylonica* and *C. macrocephala* are the most striking), *Delphiniums* in variety, *Echinops* (of which *E. ruthenicus* and *E. sphærocephalus* may be recommended), *Hollyhocks* in variety, *Ferulas* in various species (of which *F. gigantea* is the

tallest), *Romneya Coulteri*, *Galega officinalis*, *Michauxia campanuloides*, *Molospium cucurbitarium*, *Rudbeckia laciniata*, *Ostrowskia magnifica* (a recent introduction of very bold appearance), *Lupinus* in variety, *Podophyllum Emodi*, *Senecios* of various species (such as *S. Clivorum*, *S. japonicus*, *S. pulcher*, and the new *S. tanguticus*), *Crambe cordifolia* (especially desirable), *Morina longifolia*, *Papaver orientale*, *Eryngiums* in variety, &c.

PLANTS WITH SWORD OR GRASS-LIKE FOLIAGE.

Aciphylla squarrosa, *Asphodelus* in variety, *Libertia formosa*, *Hemerocallis* in variety, *Galtionia candicans*, *Kniphofia* (various species, among which *K. caulescens*, *K. nobilis*, *K. grandis* and *K. Tuckii* are the tallest and most distinct), *Montbretia crocosmæflora*, *Eremurus* in variety (of which *E. robustus* and *E. Himalai-cus* are the tallest growers); *Iris*, various species, such as *I. Monnieri* and other strong-growing kinds; species of *Yuccas*, *Phormium tenax*, *Liatris* (Snake Root) in variety, *Sparaxis pulcherrima*, &c.

PLANTS OF DWARFER GROWTH.

Anemone japonica and its varieties, *Funkia* species, *Ranunculus aconitifolius*, *Helleborus* in variety, *Megasea* (various species), *Pæonies* in variety, *Spiræas* (*Astilbes*) such as *S. palmata*, *S. japonica*, *Tiarella cordifolia*, *Incarvilleas*, *Heucheras*, *Galax aphylla*, &c. Borders that are situated in partial shade should also include such plants as *Tradescantia virginica*, *Polygonatum multiflorum*, and hardy Ferns.

FLOWERING SHRUBS.

The following species are suitable for associating with herbaceous plants: *Berberis Darwinii*, *B. stenophylla*, and *B. empetrifolia*, *Cytisus* (several species), *Erica lusitanica*, *Pæonies* in variety, *E. mediterranea*, *E. Veitchii*, and *E. carnea*, &c., *Pernettya mucronata*, *Skimmia japonica*, *Veronica Traversii* and *V. buxifolia*, *Daphne* (several species), *Olearia Haastii*, *Euonymus japonicus*, *Forsythias* in variety, *Choisya ternata*, *Cistus* (several species), *Escallonia macrantha* and *E. floribunda*, *Andromeda polifolia*, *Kalmia angustifolia* and *K. latifolia*, *Phillyreas* in variety, climbing *Roses*, *Lavendula vera*, *Rosmarinus officinalis*, *Artemisia*, and others. *P. Meyer*, *Abergele, N. Wales*.

THE FLORA OF PALESTINE.*

THE idea of this little book grew out of a tour in Palestine. . . . It seemed to me that a short account of the trees and flowers, with special reference to those mentioned in the Bible, might be of use to travellers . . . and also of interest to students of the Bible." The information, we are told, was partly gleaned from Canon Tristram's work, the *Treasury of Botany*, and Dr. Post's *Flora*.

The book consists of four chapters dealing with the characteristic flowers of Palestine, e.g., thorny plants, tropical and Alpine plants and trees, occupying 44 pages; the remainder of the book of 128 pages is an alphabetical list of the majority of species, with brief descriptions of the genera. This part will be useful to students, but a beginner would have some difficulty in recognising certain genera without any description of the family or order to which they belong. Thus, an "annual or shrubby perennial herb with linear leaves" would do for other plants than the old genus *Odontites*; but, as far as

* *Flowers and Trees of Palestine*, by Augusta A. Temple, with 44 photographic illustrations. Crown 8vo., 172 pages. Elliot Stock.

extreme brevity will allow, the authoress has generally seized upon some characteristic feature in each case. With regard to the four chapters a few observations may be made. Because Arabs to-day use the word "Shûsan" as a general term for flowers of the Lily kind, such as "Tulip, Iris, Anemone, Ranunculus, &c.," therefore references in the Old Testament to "Lilies" "probably signified any or all of these." Surely the authoress does not consider Anemone as of the "Lily" kind? It requires a study of the use of the word "Shûshan," as well as of the Greek "Krinon," to show that the ancient Greeks and Jews were quite familiar with the true Lily, and meant it. *Linum usitatissimum*, not *L. sativum*, is the botanical name for Flax. The "Rose of Jericho" is described as "having leaves like a Lycopodium." The authoress is confounding its habit of rolling up into a ball with the totally different foliage of *Selaginella convoluta*, which also rolls up when dry. The Caper is not now "generally understood to be the Hyssop." There are more reasons for suggesting Thymra. The Date and Castor-oil are not "tropical," but belong to the warmer temperate regions, as of North Africa. Lign Aloes had nothing to do with the modern plant, but is a mistranslation of the Hebrew word for tents, "ahalim." Mignonette is recorded as "wild" south-west of the Dead Sea. We should like to know if this is a fact, and that it is not "naturalised." In speaking of the different plants in the text, the beginner has no clue as to whether any one of them is indigenous or whether it has been introduced. He must refer to the list for such information; in reading these four chapters he would have no reason for suspecting an introduced species. If he has some little preliminary knowledge of the main features of the families or orders, then he will find the descriptions of the genera most helpful. But in order to obtain fuller information he must consult Dr. Post's *Flora*. Thus far, then, the authoress has successfully done what she set out to do, and the little book ought certainly to be a great help to all who really wish to know all that is possible about the plants of Palestine. H.

NEW OR NOTEWORTHY PLANTS.

CRINUM AMÆNUM, ROXBURGH, VAR. MEARSII.

BULB round or rarely oval and slightly tapering towards the apex up to 2 inches in diameter; leaves ensiform rather thin, undulate, 8 inches to 1 foot or more long, 1 inch wide, tapering gradually to a point, very smooth, closely veined, margin entire; peduncle moderately stout, somewhat flattened, a little more than $\frac{1}{4}$ inch broad, 3 to 4 $\frac{1}{2}$ inches long, umbel 6 to 10 flowered, spathe-valves about 2 $\frac{1}{2}$ inches long, thin, pale coloured, about $\frac{5}{8}$ inch broad at base, gradually tapering to a point; filiform processes present round the spathe and between the pedicels; pedicels $\frac{1}{4}$ inch long, perianth hypocateriform, tube slender, white, up to 5 inches long, erect at first, cernuous before the buds open; segments white, lanceolate, spreading, 2 $\frac{1}{2}$ inches long, $\frac{1}{2}$ inch broad, tapering and incurved near the acuminate apex; stamens not quite so long as the segments, the upper half reddish; anthers linear, $\frac{1}{2}$ inch long,

style of the same length as the segments, upper half reddish, stigma with three short lobes. Whole plant when not in flower only 2 to 3 inches high, flowering well in a 60 (3-inch) pot. This variety, of which a plant was exhibited at the Holland House show [see p. 35], was discovered in Upper Burma by Major Arthur Mears in a dry Teak wood forest on hills (2,500

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM SMITHII.

A SPLENDID example of this beautiful hybrid obtained by crossing *O. Rossii rubescens* and *O. crispum* is in flower in the fine collection of J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis). This por-



FIG. 22.—CRINUM AMÆNUM VAR. MEARSII. HEIGHT OF PLANT ABOUT 3 INCHES. FLOWERS WHITE.

feet elevation), a little to the north of Mingin. It differs from the type in being a smaller plant with smaller leaves which have glabrous edges; the peduncle also is shorter and flattened. This is probably the only form of *C. amœnum* in cultivation in this country. R. H. Beddome.

tion of the plant displays the unique beauty of its flower even in a more marked degree than was the case in the original specimen which was shown at the Royal Horticultural Society by the raisers, Messrs. Charlesworth & Co., on Dec. 5, 1905, when it obtained a First-

Class Certificate, and was illustrated in the *Gardeners' Chronicle*, Dec. 16, 1905, p. 427.

There is a remarkable combination of colour in its fine showy flower, which on close examination reveals many charming points not possessed by other *Odontoglossums*. The ground colour of the broad sepals is white, with a slight sea-green shade, the margin being deep rose-purple, and the central part bearing distinct, nearly black blotches. The central area of the petals is clear white, and the broad margin rose-purple, the inner white portion having blackish blotches as on the sepals, and both sepals and petals a short, broad and nearly black line radiating from the column. The lip is white at the base, the elongated front bright rose-purple, and the crest yellow.

ODONTIODA VUYLSTEKEÆ KINGSMILLII.

(O. PESCATOREI × C. NOEZLIANA.)

A FLOWER of this beautiful hybrid from the

It is a very attractive and unusual combination of colours, and the tone of these latter varies considerably in different aspects. The collection of *Odontoglossums* and hybrids in the house constructed for them by Mr. J. Gurney Fowler is in splendid health, and the progress the plants have made since the new house was available is satisfactory.

ONCIDIUM MACRANTHUM.

In a row along the centre staging of the largest *Odontoglossum* house in the nurseries of Messrs. J. and A. A. McBean, Cooksbridge, a number of this showy *Oncidium* has been making a fine show for several weeks past, and the plants are in a condition to continue flowering for some time to come. The long spikes are trained around sticks, so that the lateral branches form dense heads of large, yellow flowers, some of them with bronzy-coloured sepals, and all with purple markings on the lip. As each flower

MARITZBURG BOTANIC GARDEN.

THIS garden was established about the year 1874 with the object of determining the most suitable trees for planting in the midland district of Natal. The work, and the distribution of suitable trees has now been taken over by the Natal Government. The Botanic Society therefore devotes its attention to the introduction of herbaceous plants and shrubs suitable for the colony. The tall trees growing around the lake, shown in fig. 23, are examples of *Eucalyptus citriodora*, a species that is valued on account of its lemon-scented foliage. This tree grows rapidly, and forms very tall, unbranched stems, and is in consequence not of much value as a shade plant. Its timber is largely used for studs, which, after 20 years wear, show no decay; the wood is also used largely for making fences, as it splits well, bends very readily, and, above all, is practically



FIG. 23—VIEW OF A LAKE IN THE MARITZBURG BOTANIC GARDEN.

collection of J. Gurney Fowler, Esq., well demonstrated the pleasant side of Orchid hybridisation, as it proves a perfect gem in colour and form. The arrangement of the sepals and petals is perfectly flat; the lip is extended a little in front of the plane of the other segments. The sepals are bright reddish-carmine, with a white, irregular margin tinted with rose. The petals have the middle portions filled with confluent, reddish-carmine lines, the white ground colour showing through at the base and on the outer extension of the colouring, the margin being tinged with rose as in the sepals. The base of the lip is bright orange; the column is tinged with the same colour and marked with red. The crest is yellow, and the extended side lobes of the lip tipped with rose, a reddish rose blotch being in front of the crest. The front of the lip is cream-white, with a slight rose shade.

is between 3 and 4 inches across, the effect is very striking. Very few growers obtain such complete success with this species, and many fail to do anything more than induce it to make a few flowers on a very straggling spike. The trouble generally arises from the plants being kept too warm and dry, and hence the remarks about the simple manner in which Messrs. McBean grow it will be useful. *Oncidium macranthum* and the violet *Odontoglossum Edwardii*, which requires similar treatment, and flowers finely at Cooksbridge, are both grown with the *Odontoglossum crispum* and treated in a similar manner as regards water, &c., their place being the middle row of the central staging in the house. There is, therefore, no reason why all successful growers of *Odontoglossums* should not succeed equally well with *Oncidium macranthum*.

immune from the attacks of the white ant. *Salix babylonica*, the tree seen to the right of the *Eucalyptus*, is a great favourite with the colonists. It has a pendulous habit, such as is not found in any other tree in Natal. It forms a very large specimen, and is easy of cultivation and propagation, for large or small cuttings, root very readily. This species thrives best on the banks of streams. The timber burns readily, even when it is freshly felled. *Acer Negundo* succeeds better in Natal than any other species of Maple. It forms a good shade tree, and is very ornamental, but its timber is valueless. This tree also does well when planted by the water side.

The handsome *Liriodendron tulipifera* (Tulip tree) grows as rapidly as Poplars in this part of Africa, especially when it is planted in deep, alluvial soil. It is perhaps the most successful

deciduous tree in Natal, where, as a rule, deciduous trees do not form good specimens.

A great many examples of *Ceratonia Siliqua* (The Carob) are met with in Natal, but up to the present time the timber of this species has not been put to any commercial use.

Cassia fistula is a deciduous, yellow-flowered species closely resembling a *Laburnum* when

other foliage. The Flame Tree of Australia, *Sterculia acerifolia*, is one of the most ornamental of all shade trees, and when in flower it is draped with crimson blossoms. *Syncarpia laurifolia* (Turpentine tree) is a large Australian species, closely allied to the *Eucalyptus*. Its timber is especially valuable for the making of piles to withstand the action of salt or fresh

dens is *Cedrus deodara*. The colonists are planting this Cedar very extensively in the upland districts of Natal.

Other valuable trees introduced and distributed from this Botanic Garden include *Cedrus atlantica*, *Juniperus bermudiana*, and *J. virginiana*, *Cupressus lusitanica*, *Cryptomeria japonica*, *Sequoia sempervirens*, *Cedrela odorata*, *C. Toona*, *Taxodium distichum*, *Callitris australis*, *Cupressus macrocarpa*, *Eugenia Mini*, *Sapindus longifolius*, *Pinus Pinaster*, *P. insignis*, *Cupressus pyramidalis*, *Casuarina suberosa*, *Podocarpus elongata*, *Platanus orientalis*, *Ailanthus glandulosa*, *Juglans cinerea*, *Ficus elastica*, *Gleditsia triacanthos*, and *Laurus Camphora*. A. H.

SCHOOL OF HORTICULTURE.*

(See also article on p. 70.)

THE society admits a limited number of young men to study the principles and operations of horticulture in their gardens at Wisley, near Ripley, in Surrey.

CONDITIONS OF ADMISSION.

The following are the principal conditions of admission:—

1. Applicants for admission as working students into the Royal Horticultural Society's gardens at Wisley are furnished with a copy of this paper, which, when signed, must be returned to the secretary, R.H.S., Vincent Square, Westminster, accompanied by a letter in the applicant's own handwriting.
2. Applicants must not exceed 22 years in age, and they must be healthy, free from physical defect, and not so much below average height as to interfere with their prospects as gardeners. They must also be prepared to perform all kinds of gardening work, including the humblest.
3. Two testimonials as to character should accompany the application.
4. The applicant will be informed if his name has been entered for admission, and, on a vacancy occurring, he will receive notice to that effect. Should there be no vacancy within six months, the application must be renewed if admission is still desired. If not renewed, the applicant's name will be removed from the list. The terms begin on the last Monday in September, and the last Monday in March, when only can students be admitted.
5. After any applicant has received notice of his admission, a fee of £5 5s. must be forwarded to the secretary of the society before the order for admission can be issued. This payment covers all charges for two years, with the exception of books, stationery, note books, and such like.
6. No wages are given to students.
7. On appointment the student will have to sign the following agreement to abide by the rules and regulations of the gardens, and to stay not less than two years, the council having full power to terminate the engagement sooner should conditions arise rendering such a course, in their opinion, desirable.
8. Students are required to conform to the following regulations:—

(1) *Obedience*.—Implicit obedience to the director, superintendent, foremen and others appointed as instructors, and to conform to the ordinary rules of the gardens.

(2) *Regularity and Punctuality*.—To observe regularity and punctuality in daily attendance. Hours, 8.45 a.m. to 6 p.m. in summer, and in winter as may be arranged.

(3) *Holidays*.—Each student will be allowed the Bank Holidays, Sundays, Saturday afternoon (from 1 p.m.), and 21 days during the year. The 21 days holiday must be arranged, as to date, with the consent of the director

* Prospectus issued by the Royal Horticultural Society.



[Photograph by F. Mason Good.]

FIG. 24.—A GROUP OF DELPHINIUMS, NOW A FAMILIAR FEATURE IN MOST GARDENS.

seen at a distance in flower. The wood is in common use in India.

Members of the genus *Rhus* succeed well in the Maritzburg district, especially *R. coriaria* and *R. vernicifera*. The latter species yields Japan varnish, and in autumn its leaves show various tints as *Ampelopsis Veitchii* does in England, producing a very pretty effect amongst

water; the species should prove a valuable timber tree for the colony.

Tristania conferta, a large ornamental evergreen tree, will no doubt be largely grown in the future for its timber. The soil of Maritzburg suits this tree, which is exceedingly rapid in its growth.

The most graceful tree to be seen in the gar-

and superintendent, and may be taken either one week's holiday at Easter, or Christmas, and two weeks in August or September; or if preferred, three weeks in August or September.

(4) Students misconducting themselves or breaking these rules will be subject to instant dismissal.

CERTIFICATES.

Certificates of proficiency are granted to each student at the end of the two years' course provided that, in addition to fulfilling the foregoing conditions, he

(1) Pass written and practical examinations in the principles and operations of horticulture upon the syllabus laid down for study.

(2) Present an essay written by himself upon some approved horticultural or scientific subject.

(3) Submit a collection of at least 200 properly dried, named and localised plant specimens collected outside the Wisley Gardens.

(4) Submit a collection of insects either injurious or helpful to horticulture.

One or two student demonstratorships or travelling scholarships will be awarded by the council, at their discretion, after considering the reports of the director, superintendent and examiners, to enable the student to acquire special knowledge of some particular branch of horticulture. Students to whom these awards are made will receive a small remuneration and will be required to assist in demonstrating to the junior students.

COURSES OF INSTRUCTION.

There will be two courses of instruction, an elementary or first year, and an advanced or second year course. Each course will include laboratory instruction in elementary science as applied to horticulture together with field work, and garden instruction in the practical operations of horticulture. Every student will have an opportunity of spending part of his two years in each department of the garden, and the practical work will be supplemented by lectures. Students will have an opportunity of seeing the various trials and experimental work in progress in the garden. Selected students have also the advantage of attending certain of the society's shows and lectures in London.

THE LABORATORY.

The laboratory accommodates 24 students and is well lighted, ventilated and heated.

Lockers are provided for the use of each student so that books and apparatus may be kept under lock and key when not in actual use.

Apparatus.—Each student is provided with all the instruments and materials needful in the practical work of the laboratory (except knives, books and such like). Great care must be taken of these and they must always be left in good condition. Breakages will have to be paid for by the breaker.

Microscopes.—The microscopes provided must be placed in their proper compartments in the microscope cupboard when not in actual use.

Tables.—Students are expected to keep their work tables clean and tidy at all times.

Library.—A library of books useful to horticultural students is available for general use.

THE GARDEN.

The garden consists of about 60 acres of land presented to the society by the late Sir Thomas Hanbury, K.C.V.O., and includes the celebrated wild garden of the late Mr. G. F. Wilson, V.M.H. Several acres of fruit trees have since been planted, and an outdoor vineyard has been started as an experiment; fine collections of flowering shrubs and of Roses have been presented; trials of vegetables and of hardy flowers and plants are continually in progress; and an extensive range of glasshouses, including orchard house, vinery, stove, propagating pits, &c., have been erected, so that all departments of horticulture are represented. Each student also has a small plot allotted to him; and a botanical garden in which plants are systematically arranged according to a natural system of classification is in course of formation. A well-equipped meteorological station is situated in the garden.

SHORT SYLLABUS OF INSTRUCTION.

NOTE.—The following outline syllabuses are not intended to indicate more than broadly the subjects of instruction and do not show the sequence of instruction, as although arranged under different heading as Plant Life, Physics, Chemistry, Soil, &c., the inter-relation between the parts is not indicated and can only be shown in a very full syllabus. Almost everything in the following Syllabus will be studied practically by observation and by experiment.

I.—ELEMENTARY COURSE.

A.—Plant Life. Flowering Plants.

Study of a typical plant.

Study of seeds. Structure, uses of various parts. Conditions of germination. Fate of food stuff stored in seed. Respiration. Testing of seeds.

Roots. Functions of roots. Fixation. Absorption of water and earth salts. Osmosis. Root pressure. Bleeding of wounds. Study of substances absorbed. Water culture experiments. Mode of growth of root. Manner in which it is placed in a position to do its work. Transplanting, &c.

Leaves. Structure. Functions. Transpiration. Source of water and course of current. Conditions affecting transpiration. Reciprocal action of root and foliage. Absorption of carbon dioxide. Influence of light on. Photo synthesis and conditions affecting the making of starch in the leaf.

Buds and stems. Structure of buds. Growth and development of buds. Growth of stems. Conditions affecting growth of stems. Structure and function of various parts. Healing of wounds. Formation of roots from stems. Effect of pruning, ringing, notching, bending, &c. Grafting and budding. Climbing plants.

Storage of food and water. Parts of plant used for vegetative reproduction. Tubers, corms, runners, &c.

Flowers. Uses of various parts. Pollination. Cross pollination natural and artificial. Fertilisation. Formation of seeds.

Fruits. Structure of common fruits. Seed saving.

Study of plant relationships. The more common orders of flowering plants.

Field study of the influence of environment on plant growth. The vegetation typical of certain soils, and so on. Plant societies. Use of a flora.

B.—Physics and Chemistry.

Heat and temperature. Expansion and contraction thermometers. Changes of state in matter. Conduction. Radiation and absorption. Chemical changes.

Light. Chemical change under. Passage through prism.

Air. Its physical properties (barometers). Nitrogen, oxygen, carbonic acid gas, water vapour in air (hygrometer).

Water. Chemical composition of. Physical properties. Hard and soft water. Solution and solubility.

Acids, alkalis, and salts.

Carbon and some of its compounds. Carbon monoxide and dioxide, carbonates. Carbon in vegetable and animal matter. Fats and oils, starch, sugar, gluten, and albumen.

C.—Soil.

The origin and composition of soils. Mechanical analysis of soils of various kinds, loams, peats, sands, clays, &c. Physical properties of the constituents, capacity for water, &c., clay, sand, lime, humus. Soluble and insoluble constituents. Action of acid solutions, &c. Relation of plant to soil. Recognition of some of the more important salts in soils.

II.—ADVANCED COURSE.

A.—Plant Life.

A more advanced treatment of certain subjects in the elementary course, particularly with reference to plant physiology and composition, and classification. Life history and mode of life of Ferns. Study of fungi, particularly in relation to plant diseases. Geographical distribution of plants. Origin of races, varieties, &c., hybridisation, selection and fixing of varieties.

B.—Insect Life, &c.

Insects, with special reference to those injurious and helpful to plants. Life histories and habits. Treatment to destroy insect pests, mites, centipedes and millepedes, woodlice, eelworms, earthworms, snails and slugs, &c.

C.—Soils.

Further study of soil physics. "Heavy" and "light" soils. Action of lime on soils, &c. Humus—origin of, and effect on texture of soils. Water in soils. Temperature of soils and source of heat in soils, hotbeds, &c.

Chemistry of soils. Sand, clay, lime, humus. Weathering of soils. Life in the soil. Results of decay. Nitrification and denitrification. Minerals in soil. Fertility of soil. Rotation of crops. Manuring. Changes due to tillage, &c. Source and composition of artificial manures and their effect on plant growth.

D.—Economic Botany. (Lectures on.)

III.—OPERATIONS OF HORTICULTURE.

The garden affords ample opportunities for instruction in all the practical operations of horticulture both outdoors and under glass and actual work will be done by the students (who will spend the greater part of their time in the garden according to the accompanying timetable) in all the departments. Experiments in the use of insecticides and fungicides will be carried out.

The practical work will be supplemented by lectures and revision in the class-room and by friendly debates and discussions between the students themselves under the chairmanship of the director or superintendent or other capable person.

TIME TABLE FOR STUDENTS.

		MORNING.		AFTERNOON.		EVENING.	
		8.45—10.	10—1.	1—2.	2—5.	6.30—8.	
Monday	1st Year 2nd Year	Attend to Watering, &c.	Garden Work. Garden Work.	Dinner Hour.	Garden Work. Science.		
Tuesday	1st Year 2nd Year		Science. Garden Work or Show.		Garden Work. Garden Work or Show.		
Wednesday	1st Year 2nd Year		Garden Work. Garden Work.		Garden Work. Science.		Paper by Student and Discussion.
Thursday	1st Year 2nd Year		Science. Garden Work.		Garden Work. *Garden Work and Revision.		
Friday	1st Year 2nd Year		*Garden Work and Revision. Garden Work.		Garden Work. Science.		
Saturday	1st Year 2nd Year		Science. Garden Work.		Holiday.		

* Garden Work 1 hour. Revision 2 hours.

COLONIAL NOTES.

A PLAGUE OF LOCUSTS.

GARDENERS in this country experience much trouble with numerous plant-pests, but they are fortunately exempt from the plague of locusts so common in Africa and other tropical countries. Locusts often attack the vegetation in such immense numbers that they eat almost everything in their path. Our illustration at fig. 25 is kindly sent us by Mr. Stirrat from Johannesburg, and it affords some conception of what an invading host of these creatures appears like. Mr. Stirrat writes as follows:—

"It is disheartening, after one of the finest growing seasons this locality has experienced for several years past, to see the result of one's labours destroyed by millions upon millions of locusts, which have recently visited the Rand and spared scarcely any vegetation in their path.

"In the various parks under my control thousands of winter-bedding plants, some two months planted, have been eaten. The grass lawns are now in such a condition that the casual visitor can scarcely determine between the paths and the flower-beds. Every precaution was taken to keep these destructive creatures at bay, but without any apparent effect.

"It is hopeless to attempt to kill the locusts in their adult condition, and effective measures can only be instituted when they are in the wingless stage, when various arsenical sprays can be used with beneficial results.

"The photograph was taken in one of our parks in the centre of the city, and it conveys a very inadequate conception of the numbers of the pest present. One's sympathies are with the farmers, many of whom, living quite close to Johannesburg, have been practically ruined by this pest." *A. H. Stirrat, Superintendent of Parks and Cemeteries, Johannesburg, May 27.*

FRUIT CROPS OF THE SEASON.

GREEN Gooseberries, now all marketed, were a great crop with me, but were sold at unremunerative prices. Even when only about half their full size, they made no more than 3s. 6d. per half-sieve of 24lb. When about three-quarters grown, half-sieves of 28lb. made only 2s. 6d. in London, and the rail carriage was 5½d., commission 3d., and portorage 1d., making 9½d. for expenses, besides 4d. for picking. A little later the price was 2s. in London, with the same expenses to deduct, leaving me 10½d. for ¼ cwt. of Gooseberries. Finally, the price fell to 1s. 9d., leaving me 7½d., after paying for picking, or 7d., if I charge for carting to the station. The sample was not first-rate, it is true, as the bushes on the largest piece of land are young, but they were greatly over-cropped for their size. Although thinned once, they did not produce berries of the full size, partly because there was no summer heat to help them, and partly on account of the fruit being very thick, even after half had been taken off. But the top quotation was only 3d. more than I received, and 8s. per cwt. cannot be regarded as a very remunerative gross return for Gooseberries, even in the latter part of their season.

Black Currants are now ready. They are thick on the bushes, but do not look like swelling to the proper size, and, probably owing to the cold and sunless weather, they are ripening irregularly. Red Currants, grown only for home use, are a tremendous crop. Strawberries are nearly a failure here, but the soil does not suit them, and they are not grown for market. Raspberries, which the soil does suit, show great promise.

Cherries are moderately thick on the trees, but are small. For the first time I have "brown rot" on Cherries, one of the many bad results of this miserably cold and wet season.

Plums, in my plantation, are abundant on the whole, but a good many have turned red and are dropping. Early Rivers and Monarch show

moderate crops, while the variety Victoria is overloaded with fruit, and Czar and Gisborne have great crops on them. Pond's Seedling alone has "stoned" badly. With me it is the weakest grower, and the most infested by aphids. Even Coe's Golden Drop has a moderate crop, and Old Greengage a small one. Black Diamond, grown only in my

and burnt. This new victim, although a fine tree, will share the same fate as soon as the fruit has been taken from it. The Damson crop with me is a good one.

The Apple crop, in spite of the profuse blossoming of the trees, is not far short of a failure, not only in my plantations, but throughout my district also. This may probably be attributed

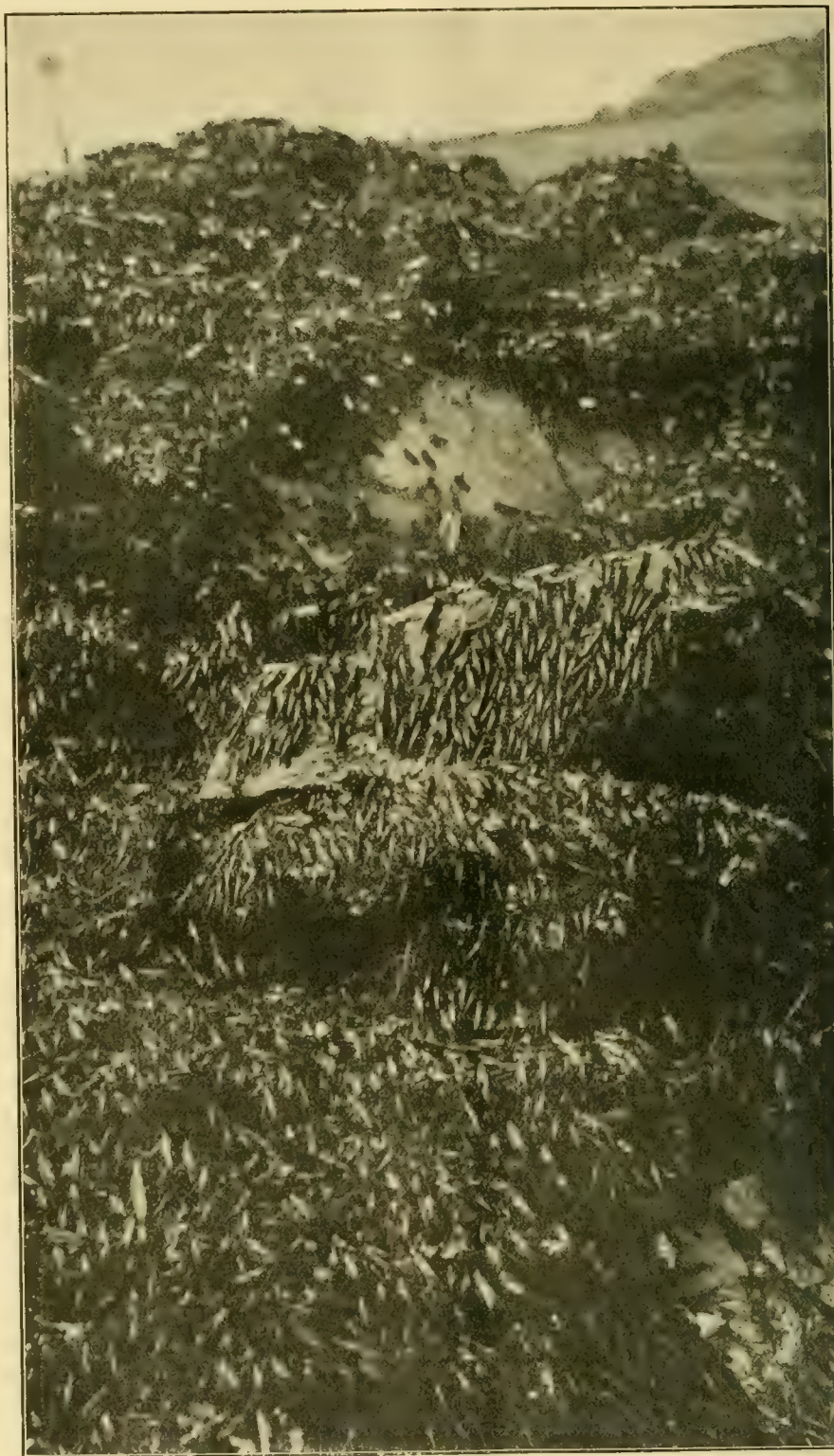


FIG. 25.—A PLAGUE OF LOCUSTS IN A JOHANNESBURG GARDEN.

private orchard, has only half a crop, while Deniston's Superb Gage bears a good one, and Reine Claude Violette hardly any. I have a little "brown rot" in Plums for the first time. A tree of the variety Victoria is noticeable as attacked by "silverleaf," but yet bearing a good crop of Plums. All similarly-affected trees that were noticeable last season were dug up

to two causes—the first, the cold and wet period of blossoming; and the second, the over-production of last season. Some varieties which fruited heavily last year have hardly any Apples upon them. These include Domino, Lord Grosvenor, Lady Sudeley, Blenheim Pippin, Stirling Castle, and Allington. The last two have never before failed to bear good crops. Potts's

Seedling did not bear well last year, and this season it is almost entirely fruitless. Next to King of the Pippins and Ribston it is the most cankered variety that I grow. Lane's Prince Albert bears half a crop, and Queen, Bramley's Seedling, and Royal Jubilee about the same. Newton Wonder is somewhat more fruitful. The only fair crops here are those of the variety last-named, Early Julyan (on some trees only), Mr. Gladstone, Irish Peach, Beauty of Bath, and Duchess of Oldenberg. King of the Pippins has barely half a crop.

The deficient yield, unfortunately, is not the only trouble, for the bulk of the fruit is dwarfed, and much of it is scabby, while there is the worst attack of the Sawfly maggot that my trees have suffered. The dwarfing of much of the fruit is due to a persistent attack of the pestilent aphid, which smothers the foliage of nearly every truss of fruit. Last season I sprayed three times with quassia and soft soap, but failed to materially check the aphid attack. This season I was not disposed to spend money for nothing

Plums also will flourish there. But a little scab is to be seen on Cox's Orange Pippin in a young plantation on heavier land, where other varieties are free from the disease, and this is discouraging, as the variety is the one which, above all others, it is desirable to be able to grow.

To return for a moment to the aphid attack, in order to notice an experiment which should have been mentioned above, a large fruit-grower here has dusted his infested trees with lime and sulphur in equal proportions, reporting favourably upon the result. Accordingly, I tried the remedy on a dozen badly-infested trees, doing them thoroughly. Two days later they were carefully examined, and there was the conflict of evidence which is so annoyingly common when the results of experiments for the destruction of pests are searched for. On some leaves well covered with the dust the aphides were dead, only their dry skins being left, while on others they were as full of life as ever. Moreover, on trees not dusted, leaves were found with only aphid skins upon them. Clearly, then,



[Photograph by C. P. Raffill.]

FIG. 26.—LILIIUM BROWNII FLOWERING IN A BED OF HEATHER AT KEW.

in spraying specially for this pest, but trusted to the Bordeaux mixture, applied to check scab, as, when hot sunshine follows its application, this wash has a drying effect which is fatal to the green fly to a great extent. As for fungus pests, scab and brown rot are more extensive even than they were last season. Cox's Orange Pippin is affected with scab so badly that the crop is quite ruined, while nearly all the leaves have fallen off the trees, and Bismarck is nearly as bad. It is obvious that neither variety will flourish in my lightest soil. Very severe cutting back—to the main branches—and drenching with sulphate of iron in the autumn, and with Bordeaux mixture in the following season, will be tried, in order to see if a new and more vigorous growth will result. But Plums will be planted between the Apples, so that they can replace them if the latter do not recover. Strange to say, Damsons grow with the greatest vigour where Apples fail, and, therefore, it may be hoped that

no certain conclusion was to be derived from the evidence of the dusted trees. But I was not at the end of my resources. I placed some leaves covered with aphides in a small box, and smothered them with lime and sulphur dust. Two days later they were examined, and the great majority of the aphides were fully alive, struggling with the dust which enveloped them. This satisfied me as to the failure of lime and sulphur to destroy the aphid.

Pears, which blossomed with the utmost profusion, have set very badly as a rule. The only varieties bearing fairly here are Louise Bonne of Jersey, Doyenné du Comice, and Jersey Gratioli. Clapp's Favourite has half a crop, and Williams' Bon Chrétien a smaller one; but most other sorts are nearly barren. A tree of Catillac, which was about as densely covered with blossom as it could possibly be, bears one Pear, while Marie Louise has no fruit at all. A *Working Grower*.

LILIIUM BROWNII AT KEW.

WE are sometimes asked for information in regard to the planting of Liliums, such correspondents appearing in doubt as to the conditions of soil and position that are most suitable for their cultivation. In the Royal Gardens, Kew, there may be seen at the present time plenty of illustrations of Liliums growing and flowering well in Rhododendron beds and in other beds that are planted with various species of Erica. In the preparation of beds for these plants it is usual to employ a proportion of peat, which is mixed with the staple soil, or with loam procured for the purpose, and such a compost is well adapted for the cultivation of Liliums. But, furthermore, the bulbous plants appear to be favoured by the surface of the ground being more or less shaded from the rays of the sun by the Rhododendron bushes, or dwarfed-heather. It should be pointed out, however, that in order that the effect may be good when the Liliums flower, the bulbs should only be planted amongst Rhododendrons of such stature that the Liliums will be able to develop their flowers well above the tops of the shrubs. It may be necessary to lift the bulbs after several years have elapsed, and re-plant them amongst Rhododendrons of a lesser size. It is no disadvantage that the lower portion of the Lilium stems is hidden from view, but in some cases, as in that of the elegant species *L. testaceum*, which is apt to become shabby of foliage, it is a distinct advantage. Mr. Raffill's photograph, which is reproduced at fig. 26, shows the species *L. Brownii* flowering abundantly in a bed of heather. The flowers of *L. Brownii* are white, with brownish-purple on the outer surface of the petals.

THE PROPAGATOR.

TREATMENT OF CUTTINGS.

THESE should be taken from perfectly healthy plants, and made with a very sharp knife, and preferably a penknife having a fine, thin blade, so that the cuts may be smooth. Cuttings of plants which put forth roots from the surface of the cut should be severed just beneath a bud or joint, and in a horizontal direction. The formation of roots is preceded by that of a callus—a spongy tissue which forms between the bark or rind and the inner tissue, and from out of which the roots emerge. The formation of a callus indicates the certainty, barring accidents, of the development of the cutting into a plant; and the healthier the plant of which the cutting formed a part, the more quickly does callus-development proceed. In the case of plants which have two periods of growth in a year, the cuttings are best when taken from the first growth of shoots; and by those which grow continuously the cuttings should be selected from shoots whose rind has begun to change colour. Cuttings which root from any part of the rind need not be cut at a joint, and such cuttings will form roots even when laid on the propagating bed, if the warmth be sufficient. Cuttings of soft-wooded plants should be cut at the base horizontally, just below an eye or a bud, in order to make certain of their rooting. Do not allow cuttings to remain out of the soil long enough for the cut surface to become dry, unless the plants have milky sap, as in the case of *Ficus*, *Euphorbia*, &c., but put them into the cutting-pots, pans, or the sandbed forthwith, making them firm therein and affording a slight application of water. If one cutting per pot be the method in use for certain species, the pots should have no greater internal diameter than 1½ inches, the cutting being placed in the centre. Always make use of a dibber of a suitable size to make holes for the cuttings, as forcing a cutting into the sand or soil is sure to cause injury to the rind at the base. Do not cover any cuttings with a bell-glass before the leaves are dry, and do not insert cuttings of divers species of plants under the same bell-glass, for the rooting often occurs at different times. Cuttings which emit roots from the surface or exterior of the rind may be inserted deeper than those which form roots from the base. In the case of plants with milky sap, the cuttings should be trimmed and afterwards be placed head downwards in moistened soil, keeping them therein for 24 hours or longer time (*Euphorbias* of some species for a month) till the sap dries on the wounds

made; afterwards wash the base with a wet sponge to remove the dried juices, an act that favours the rooting process.

In the present month, cuttings of Tea, Noisette, Hybrid Tea, China or Monthly, and Bengal Roses may be rooted in frames placed on mild hotbeds of tree-leaves and stable litter, sweetened by three turnings and mixings previously to making the beds. If the bed be made of a thickness of 2½ feet, sufficient warmth will be afforded for rooting the cuttings within four or five weeks. (See pages 5 and 6, July 7 last year, for full directions as to carrying out the propagating of Roses from cuttings.) Most of the Roses mentioned above do well on their own roots, and are seldom injured severely by frost, whereas budded Roses suffer from this cause in hard winters when the snowfall is very light or is absent. Budding of dwarf Roses is the nurseryman's plan of raising a large number of plants, but the amateur and gardener has seldom any motive to employ it for the class of Roses named.

DECORATIVE PLANTS FOR THE FLOWER-GARDEN.

From the middle of July to the middle of August is the most suitable period for the propagation of the following plants, either several together in store pots of 6-8 inches inside measurement, or singly in 60's:—*Alternanthera Angelonia*, *Anthemis*, *Bouvardia*, *Cineraria*, *Chelone*, *Gazania*, *Gnaphalium*, *Fuschia* (for early flowering in pots in the greenhouse), *Heliotrope*, *Lantana*, *Pelargoniums*, including Cape, fancy, decorative, zonal, Ivy-leaved, and the scented-leaved varieties and species; *Pentstemon*, *Petunia*, *Phlox*, *Phygellus capensis*, *Iresine*, *Salvia*, *Senecio*, *Solanum*, *Tropæolum*, *Verbena*, *Lobelia erinus* varieties, *Cuphea*, *Ageratum*, *Coleus*, *Ferdinanda*, *Ficus*, and *Dracæna*.

Most of the foregoing plants require to be merely afforded frame protection, and to be kept close and shaded from sunshine, with moderate applications of water and a sprinkling overhead, about 4 p.m. on hot days. Damping off can be avoided by an early removal of the lights each morning, if the weather be fine.

The sub-tropical and tender species root the more readily if slight bottom heat can be applied. *Pelargoniums* of the Cape, fancy, Odier, and decorative sections, strike freely from cuttings of ripened shoots, inserted singly in small 60's, or to the number of four to six in 48's, and *Zonals* root freely in sandy soil in beds in the open air in full sunshine.

They may likewise be rooted in cutting-boxes, each holding 1½-2 dozen cuttings, if wintering space be limited. Fine varieties of *Phlox decussata*, *P. Drummondii*, and double-flowered *Senecio elegans*, which may not be obtained true from seeds, may be struck from cuttings of the short shoots taken from near to the base of the plants, which are the more suitable for rooting than shoots growing on the upper parts of the plants. They should be cut close under a joint, and if they are put into a bed enriched with leaf-soil, and afforded a layer of sharp sand on the surface, shaded with reed or other mats from hot sunshine, and the soil kept moderately moist, success is tolerably certain to follow. An ordinary garden frame is also a suitable aid in rooting these cuttings.

KENNEDYA.

This plant may be increased by means of cuttings at this season, if afforded a bottom heat of 60°-65° and a moderate degree of moisture. The short shoots coming from the stems form the most suitable cuttings. They should be covered with a bell-glass.

LAYERING.

There are numerous plants which root with difficulty by the cutting method, and that make roots readily when layered. The shoots should have reached a certain degree of maturity, which, with some subjects occurs in the month of June. The following is a list of common garden plants which should be propagated by layering:—*Amorpha*, *Azalea*, *Berberis*, *Bignonia*, *Calycanthus*, *Ceanothus*, *Cercis*, *Clematis*, *Cornus*, *Deutzia*, *Euonymus*, *Æsculus macrostachya*, *Laurus*, *Magnolia*, *Ornus*, *Pæonia*, *Rhododendron*, *Rhus*, *Ribes*, *Spiræa*, such as *S. lævigata*, and some of the *Viburnums*. *F. M.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Oncidium leucochilum is a useful subject for providing a supply of cut flowers, and for decorative effect in the plant houses. For several seasons past plants of this species have formed a prominent feature in one of the cool intermediate houses at Burford; they have developed flower-spikes from 5 to more than 6 feet in length, and branched almost from the base, each spike carrying a large number of white-lipped flowers. They remain in flower for at least a month. After the inflorescences are removed, the plants should be placed at the cool end of the house, and be given plenty of fresh air. In some cases, owing to the strain of carrying such large flower-spikes, the pseudobulbs shrivel considerably, and it is only with care that the plants are brought to their normal condition again. Instead of affording water in large quantities with the object of making the bulbs plump, the safer plan is to damp the growths lightly overhead with a fine spray two or three times each day until growth recommences. At the same time, the plants' surroundings must be kept in a fairly moist condition. Repotting should be done soon after growth has started. The plants at Burford are potted in a compost consisting of equal parts fibrous peat and leaf soil, with a moderate quantity of chopped sphagnum-moss and small crocks. When grown in this material, the plants require repotting annually. Place a few crocks over the bottom of the pot, and repot them in a similar manner as an ordinary garden plant is potted. Fill the pots with the compost to within half an inch of the rim, and finish with a surfacing of living sphagnum-moss, which should be placed quite firmly around the base of the plant. Such *Oncidiums* as *O. concolor*, *O. Forbesii*, *O. crispum*, *O. prætextum*, *O. varicosum*, *O. ramosum*, &c., which have started into growth, should also be repotted in the same material. These are all cooler growing species, and they thrive best in the *Odontoglossum* house. Orchids that are grown in this mixture should never be thoroughly saturated with water at their roots, and moisture sufficient only to keep the sphagnum in a fresh condition must be given them. Use a fine rose when watering. *O. macranthum* is now in bloom. When in flower this plant should be given a maximum supply of water at its roots, and more than at any other period.

Dwarf-habited Odontoglossums, including *Odontoglossum cordatum*, *O. maculatum*, *O. Cerdstedii*, *O. aspersum*, *O. Humeum*, and *O. Duvivierianum*, can be accommodated very well in shallow pans suspended from the roof. They succeed in the same compost as advised for the *Oncidiums*.

Lælia harpophylla may also be repotted now, in a mixture of peat and moss, with ample material for drainage. Throughout the summer keep this plant in the cool intermediate house.

Platyclinis filiformis is sending up numerous thread-like flower-spikes. Suspend the plant in a light, moist position in the intermediate house, and afford it plenty of moisture overhead from a fine sprayer until the flowers begin to open, after which any water must be applied without wetting the flowers. *P. glumacea*, *P. Cobbiana*, and *P. uncatata* all thrive well under the same conditions of temperature. They are now at their resting season, but they still require sufficient moisture to preserve the small bulbs and leaves in a plump condition. Spray the under surfaces of the leaves occasionally, in order to keep insect pests in check.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. Thomson Paton, Esq., Norwood, Alloa, Clackmannanshire.

Pine Apples.—Plants which are now showing their fruit may be given liquid manure at every watering, but care must be taken to supply this at the exact time it is needed. They should also be given a top-dressing of horse droppings, mixed with an equal quantity of finely-broken, rich loam. Keep the atmosphere of the house moist by damping down two or three times a day. Close the pit early in the afternoon that the temperature may

rise with sun-heat to 95° or 100°. The weather being warmer, very little fire heat will be required in the pits during its continuance, except that the supply of bottom heat must be maintained. Fine sprayings over the plants with the syringe on bright, warm afternoons are advisable, but care should be taken to avoid unduly wetting the crowns. The structure containing fruits now developing colour should be freely ventilated on warm days, keeping the atmosphere somewhat dry at all times. Such plants require no more water at the roots than is sufficient to keep the leaves in a condition of health. Plants bearing fruits already ripe should be removed to a cool, well-ventilated fruit room.

Successional Pines.—Plants which will fruit next summer should be well established in their fruiting pots by the end of the next month. They must not be kept growing until late in the autumn. Do not let them suffer from dryness at the roots, but be just as careful not to over-water them. All that they require is sufficient water to prevent flagging.

Vines which were raised from "eyes" last spring, and planted out into new borders in June, should be making a short-jointed, steady growth. If they are showing signs of becoming excessively strong in growth, pinch the leading shoot at 5 feet from the ground, but if such is not the case, do not pinch the shoot until it has reached the top of trellis or rafters. Those pinched at 5 feet from the ground must again be stopped at top of trellis. All lateral growths upon very strong-growing canes may be pinched at the first leaf; in the case of weaker Vines no pinching is required, but the tying in of the shoots is very necessary. Allowing this freedom of growth encourages root action, and this is exactly what weak Vines require. Test the borders, and if the soil is dry, afford tepid water. Damp down the surfaces in the house every night and morning. An atmospheric temperature of 70° at night, and 80° to 90° by day will be sufficient. Reduce the ventilation early in the afternoon, and leave the top and bottom ventilators partly open throughout the night. Use as little fire heat as possible. Keep a sharp look-out for red spider, and, if it is discovered, syringe the Vines every afternoon.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq., Cobham Park, Surrey.

Early Celery is now large enough for earthing-up, but before doing this see that the plants are in a moist condition at their roots and that the top growths are thoroughly dry. Earth applied about the stems when the latter are wet will set up damping in the plants. The whole practice of earthing-up is most important, for the crop is liable to be ruined if the work is performed in a careless manner. The tying of the stems previous to earthing-up the plants is not so generally practised as formerly, but if this is done, care must be taken that they are not tied tightly, so as to prevent the inner leaves from developing. If tying is dispensed with, place the leaves in their proper position, and grasp them with the left hand, and with the right draw the soil well up and around the plant, at the same time pressing it well. After each plant has been treated in this manner, fill up the trench with soil to the level of that placed about the plants by the hand. Earthing-up should be done gradually and at intervals of about 10 days, but the progress of the plants should be the best guide as to when more soil is necessary.

Celeriac on light soils must be given frequent waterings. Remove the short, outer leaves, or any side shoots that may appear, also any unnecessary roots that develop towards the base of the stem. Do this work at intervals of from three weeks to a month.

Carrots.—A sowing of such early varieties as *Early French Horn*, or *Early Gem*, should now be made on a warm border, or in a partially protected position. The roots will be most useful in late winter and early spring, especially in places where young Carrots are in demand and frames are not available for their sowing. Select a spot for the sowing so that the plants can receive the protection of some dry leaves, later on, without causing an untidy appearance in the garden. These Carrots should be left in the ground until they are required for use.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq.,
Eastwell Park, Kent.

Souvenir de la Malmaison Carnations.—As the plants pass out of bloom, no time should be lost in making preparations for carrying out the operation of layering, in order that there may be sufficient time afterwards for the layers to become strong and well-established before the commencement of winter. Select only strong, healthy plants for use in layering, it being likely that the employment of weak and unhealthy plants for this purpose is partly responsible for the deterioration seen in some stocks. A frame is undoubtedly the best place in which to layer the plants, for in such a place they can be protected from heavy rains, which are injurious if they keep the roots in a condition of more or less saturation. In frames, the grower can use his discretion as to whether the lights should be used or not at any particular time, but by no means should he keep the frames closed. Our usual practice here is to layer the plants in the frames lately occupied by Potatoes. The soil which was used for that crop may be made quite suitable by adding a quantity of gritty matter or sand, mixed with some leaf-soil, this fresh material being placed immediately around the plant for the young roots to work into. Let the old plants be thoroughly watered before planting them. As the work proceeds, water the plants overhead slightly, and, in bright weather, such as is usually experienced at this time of the year, afford a slight degree of shade for a few weeks; but admit air freely at all times. When the young layers show signs of growth, provided the weather is fine, withdraw the lights altogether in the evening, thus allowing the plants to have the full benefit of the night dews.

Gesneras.—The portion of the stock required to bloom early in the winter should now be shaken out of the pots, and, after repotting the tubers, be placed in a warm house or stove. Use a compost consisting of turfy loam, peat, and leaf-soil in equal parts, with sand and charcoal added to keep the whole porous. Be careful not to use pots of a larger size than is necessary. *Gesneras* succeed well in pots measuring from 3 to 4½ inches in diameter. If large specimens are required, the strongest plants may be selected when they have made a good start for the purpose of placing several together in pans or pots of such sizes as may be required for the special purpose in view. The tubers require very little water at first, the atmospheric moisture being sufficient to start them into growth. Afford water carefully as growth increases, but at no stage do these plants require large quantities. Arrange the plants thinly on the stage to allow the leaves proper room to develop, and shade the plants rather heavily during hot sunshine. As the flower-spikes develop, a small, neat stake will be necessary to keep each plant in position. When the plants are in bloom, reduce the atmospheric moisture, but do not have a lower atmospheric temperature than 57° to 60° at night at that period, allowing a rise of 10° in the day.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to LORD CLINTON, Bilton,
East Devon.

Strawberries.—If the ground for the planting of new beds is not yet prepared, it should at once be trenched, or double-dug. A moderate amount of good manure should be incorporated between the two spits, and the ground should be made firm by treading before planting. Well-rooted runners may be planted at once, a suitable distance being 1 foot apart in the rows, the latter being separated by a distance of 2 feet. Next season, after the fruits have been gathered, every alternate plant in the rows should be removed; this will afford a space of 2 feet between the plants every way. Give the young plants a good watering in their pots an hour or more previous to planting them in the rows. Make the soil about them firm with the feet, and form a small hollow in the soil around each plant, so that water can be conveniently applied to the roots. In the case of the variety *Royal Sovereign*, allow a further 6 inches of space both in and between the rows, on account of the wealth of foliage which this variety produces on most soils.

As soon as the fruit has been cleared from the established beds, trim off the rough bottom leaves, sever any runners with the knife, and remove all rubbish and litter from the rows. When this has been done, stir the surface of the soil with the flat hoe to destroy weeds, and to lighten the ground which has become hard and consolidated from persons walking in the rows to gather the fruit. Plants that were forced, and afterwards planted out in May or June, must not be allowed to develop a further crop of fruits this season. All flower-spikes must be removed as soon as they appear, and any runners be destroyed, so that the plants may build up strong crowns for next year's fruiting.

The Fig.—With the beneficial change in the weather these trees have made rapid growth, and the new shoots will need securing to the wall or trellis so that the fruits may be exposed as much as possible to the sunshine. Continue to apply copious waterings to trees carrying heavy crops, which appear to be general this season. Stop any shoots not required for the extension of the trees, and rub off superfluous growths on the fruiting wood, as well as any on the older branches that are not required.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow,
Cornwall.

Watering plants in the open.—It is a matter of controversy as to whether the morning or the evening is the better time for affording water to plants in the open. My practice is to select the late afternoon and evening for this work, providing the nights are warm, but if the night temperature is low, the watering is done during the mornings. This work should not be commenced too early in the afternoons, nor continued too late in the mornings, or the foliage will be liable to scorching by the sun's rays, and it is wise to cease the work sufficiently early in the evenings to allow the plants and their surroundings to become moderately dry before night time arrives. One thorough soaking is better than several light waterings, which occasionally do more harm than good. If the surface soil is stirred, either with the Dutch hoe or with a light rake, soon after the watering is done, evaporation will be largely checked, and the effects of the watering will be more lasting. If circumstances do not permit of much watering being done, frequent hoeing of the surface soil and application of mulchings will be found good substitutes. Providing that they are not allowed to suffer from drought, *Pelargoniums* and similar bedding plants, once they have become established, will give a better display if they are not watered. Many other subjects, however, including *Lobelia cardinalis*, *Cannas*, and most large or ornamental-foliaged sub-tropical plants, must be freely watered during dry weather. Trees and shrubs which were planted late in the spring should now be drawing plenty of moisture from the soil, and may generally be left to themselves, but should any appear to be suffering from lack of moisture, they must be copiously watered, have a mulching of manure placed over their roots, and be syringed towards the close of hot afternoons. After a period of three weeks or more from this date a moderate dryness at the roots will be beneficial to shrubs.

Flower-beds.—If the beds are surrounded by grass, their edges must be frequently clipped. All dead or disfigured leaves, faded flowers, and seed pods must be removed, and all flower-buds on plants which are grown solely for their foliage must be destroyed. The plants forming bands or borderings to the beds must be restricted to a suitable size, and the growths of trailing subjects pegged down. When these latter plants have filled their allotted spaces, they should have some of their side shoots removed in order to promote a sturdy habit of growth. This is especially necessary in the case of *Verbenas*, for when the foliage of these plants becomes crowded, the dreaded mildew soon makes its appearance on them.

PUBLIC PARKS AND GARDENS.

By W. W. PERTIGREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

Preparations for spring bedding.—The season has now arrived, when, as a rule, in most parks arrangements are being made for next year's spring bedding, and the orders for the various

bulbs required are placed with the successful contractors, ready for execution in the autumn. In many parks spring bedding schemes are conceived on a very elaborate and extensive scale, and, as a consequence, large sums of money are needed for the provision of the material—especially bulbs—necessary for carrying them into effect. Until within recent years *Hyacinths* and *Tulips* were the two plants most used for this work, and as a result spring bedding, although brilliant and striking, was characterised by monotony and stiffness. Latterly it has become customary to utilise many different kinds of bulbous plants in addition to numerous other spring flowering plants. Park officials are realising more and more that the use of *Hyacinths* and *Tulips* in large quantities is not only extravagant, but in many instances gives less satisfactory results than may be obtained by the use of cheaper home-grown material.

Other plants.—We find that *Hyacinths* and *Tulips* are so easily damaged by wind and rain, and their period of blooming is of such brief duration, that preference is naturally given to more suitable subjects such as *Aubrietias*, *Polyanthus*, *Primroses*, *Double Arabis*, *Myosotis*, *Violas*, *Alyssum*, *Double Daisies*, &c. These have all a long period of flowering, and are, as a rule, little injured by the effects of the weather, while in addition they are exceedingly cheap, being easily propagated in great quantities by means of seeds, cuttings, or division.

Wallflowers, when they succeed, are delightful objects in the spring garden, both on account of their colour and perfume. We find them, however, so susceptible to injury from frost or excessive winter rains that they are quite unreliable for taking a place in any colour arrangement, and are better adapted for the general spring border than for a design.

Aubrietias, *Arabis*, and *Alyssum* are best raised from cuttings taken each year just as the old plants finish flowering. Although *Aubrietias* are invariably increased by division, it can hardly be denied that cuttings give the larger and better coloured flowers. *Polyanthus*, when required in special shades of colour, have to be propagated by division, but are hardly fit for use until the second year. With the exception of the *Violas*, most of the ordinary spring-flowering plants are raised from seed.

AMERICAN ASSOCIATION OF PARK SUPERINTENDENTS.—The June number of the *Bulletin* of this society just to hand contains a great amount of information upon public park matters, which is interesting and suggestive reading to all who are engaged in park work. The *Bulletin* is in the first instance type-written, and is passed on from member to member throughout the States, most of whom before passing it on give their views upon, or state their experience regarding, the subject under discussion. In this way every matter taken up is dealt with in the broadest possible manner, and regarded from a great variety of standpoints. In the present issue the most important questions considered are "The Construction of Roads, Paths, and Drives," "Evergreens for Parks," and "Fertilisers." On reading through the various articles, one cannot fail to notice many differences in the practices adopted on this and the other side of the Atlantic. For instance, the use of sawdust as a mulch, or sand as a fertiliser, and a gasoline heater as a weed-killer, all appear strange to British cultivators. Copies of the *Bulletin* can be had for a very small sum from the secretary of the association, Mr. F. L. Mulford, Superintendent of Parks, Harrisburg, Pa., U.S.A.

THE SUPERINTENDENCY OF HYDE PARK.—We learn that the late Mr. Jordan's successor in the post of superintendent of Hyde Park and some other open spaces is Mr. J. A. Gardiner, who has held the important position of superintendent at Hampton Court Palace Gardens and Parks for the past 11 years. During that period quite a revolution in the garden decoration and summer bedding has been wrought, and in many directions improvements have been made. Mr. Gardiner came to Hampton Court from Greenwich Park. He is by seniority entitled to the promotion. His successor at Hampton Court will be Mr. Marlow, who is now at Greenwich Park, and was at one time foreman in the Park where he will now be the head

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, JULY 27—Lydney Fl. Sh.

WEDNESDAY, JULY 31—
Chesterfield Fl. Sh.
Bishop's Stortford Fl. Sh.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—62.2°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, July 24 (6 P.M.): Max. 67°; Min. 50°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, July 25 (10 A.M.): Bar. 29.9; Temp., 58°; Weather—Bright sunshine.

PROVINCES.—Wednesday, July 17 (6 P.M.): Max. 68°; Ireland, S.W.; Min. 52°; Scotland, N.E.

Science
at
Wisley.

Friday in last week is likely to be regarded in the future as a red-letter day in the history of the Royal Horticultural Society. On that day there was formally inaugurated a scheme by which it is hoped much will be done to compensate for the many years during which the Society has not been able to assist in the important work of scientific research. Its earlier history is marked by the invaluable services rendered to horticulture in the introduction of new species of plants to this country through the indefatigable collectors the Society sent into distant parts of the world. Their names, which include those of David Douglas, Robert Fortune, and others, have been enumerated in these pages again and again, and they will always deserve to be remembered with appreciation. During the long period the Society held the Chiswick gardens under a lease from the Duke of Devonshire it promoted important exhibitions and conferences; it also conducted trials of varieties of fruits, flowers, and vegetables, all of which were of greater or less interest, and most of them were of some permanent value to cultivators.

The period during which the Society was at South Kensington so impoverished its funds that for many years afterwards a policy of severe retrenchment was enforced upon those charged with the management, and in no direction was this felt more acutely than in the management of the Chiswick gardens, which, in spite of their glorious traditions, were permitted to deteriorate so greatly that they became almost an object of contempt.

In such circumstances, there is little wonder the Society felt itself unable to undertake fresh work which would be certain to impose additional financial obligations. As was pointed out by several of the speakers at Friday's ceremony, the conditions which obtained at the time when Sir Trevor Lawrence was appointed president were anything but satisfactory. The years which intervened between that period and the celebration of the centenary of the Society in 1904 were devoted to husbanding its resources and increasing its membership and prestige. In the meantime the need for facilities for the prosecution of research work became recognised more clearly, and it was expressed so frequently and persistently in these pages that it may sometimes have appeared monotonous by its reiteration. The gift of the Wisley Gardens to the Society in 1904 by the late Sir Thomas Hanbury, who purchased them for the purpose from the executors of the late Mr. G. F. Wilson (see *Gardeners' Chronicle*, August 15, 1903), gave a fresh impetus to

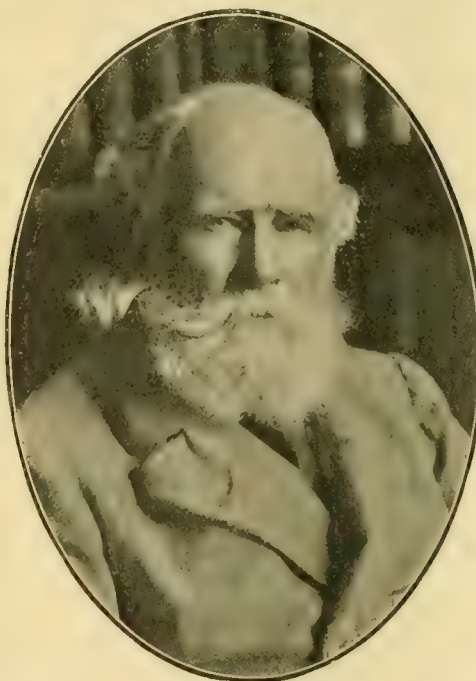


Photo by]

[Rissill & Sons.

LORD AVEBURY, P.C., F.R.S., WHO OPENED THE RESEARCH STATION AT WISLEY.

the demand for a scientific department, and this demand was urged upon the Council by Professor Bateson and other speakers at the last important function held in the Chiswick gardens on September 29, 1903, in connection with the exhibition of vegetables. That the scheme is now in actual operation is due mainly to the unparalleled success of the Society in recent years, but thanks are due to the present Council for having determined to apply part of the increased income to this purpose.

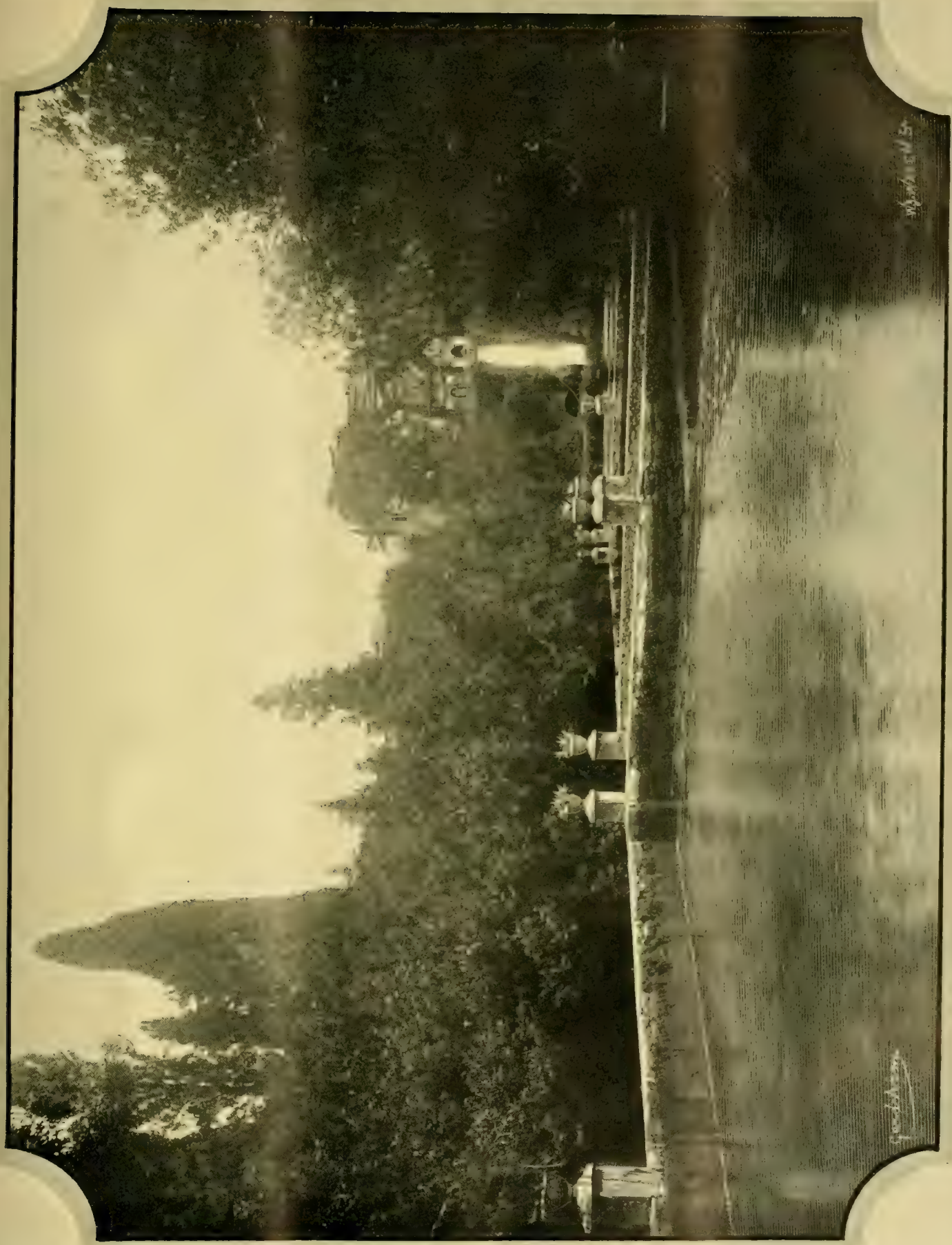
We need not enter into a detailed description of the new laboratory as this was the subject of an article in our issue for April 13 last, when the exterior of the building was illustrated. As will be seen on reference to page 64 of our present issue, the Council is establishing a school of horticulture for training young gardeners, and for the first time in the history of the Society it will be able to instruct the students in the science of gar-

dening as well as in the arts of cultivation. It is scarcely necessary at this date to insist on the value of instruction in the principles that underlie practice. An intelligent knowledge of the means and processes by which plants subsist, of the conditions that accelerate or retard growth, of the various organisms in the soil that conduce to fertility, of the nature and effect of various manures on different plants, of the habits of insects and the life histories of fungus diseases is as necessary to the making of a perfect gardener as familiarity with the actual details of potting, digging, pruning, and other operations of practical gardening. The objections that have sometimes been made to scientific training have generally arisen from the fear that in the acquiring of such knowledge the student neglects to obtain the practical experience equally essential to successful cultivation.

The Society must therefore insist that its students, whilst acquiring theoretical knowledge, shall be encouraged to develop an appreciation and enthusiasm for plant-culture. A student who exhibits an indifference to cultural details, and has no desire to learn by experience the best methods of carrying out the various operations of gardening, or the proper seasons in which to do them, will certainly never become a good gardener. A gardener's highest quality lies in his skill as a cultivator, therefore the science he studies should be such as will help him to excel in the art of cultivation—it is an important means to an end, rather than a goal in itself. Mr. Chittenden, who has been appointed director of this department at Wisley, and whose portrait was published in our issue for April 13 last, may be trusted to take the proper view of this question, and so arrange the syllabus for his students that they will be able to learn those scientific principles which have the nearest relation to gardening practice.

The Surrey County Council has arranged with the Royal Horticultural Society to send a number of boys from the county schools for instruction at Wisley, but whether this will eventually lead to that Council having any voice in the management of the Wisley School we do not know. From remarks made by several of the speakers it is evident that the Society will do its utmost to obtain grants from the State, and in the event of these efforts meeting with success there is little doubt but that the Board of Agriculture and Fisheries will impose some condition or at least satisfy itself that the school is conducted in a manner the Board could approve. State aid, it may be pointed out, is always accompanied, in some degree at least, with State control.

But it is greatly to be hoped that the time and energies of the department will not be wholly absorbed by the school of horticulture. The mere teaching of science to students, important as it is, is not quite the work that those who have most desired the institution of a scientific department at Wisley had in their minds. It is in the making of science, rather than in its teaching, the Fellows are most interested, and the success or failure of the department will be largely determined by the amount of research work accomplished. Mr. Chittenden



WATER-SCENE IN THE GROUNDS OF THE VILLA D'ESTE, TIVOLI, NEAR ROME.

is just the man to undertake work of this description, but in order that he may do so it is necessary that his hands should not be tied, and all his time occupied, in the in-

and vegetables. It is for the solving of these by experiments conducted in the laboratory and in the garden that the scientific department will find its justification. The Society may also be able to provide facilities that may be placed at the disposal of properly qualified and accredited investigators who may wish to pursue scientific research upon special subjects, but who have not the facilities that may be obtained in a laboratory. How far arrangements can be made for such cases, however, can hardly be determined before the station has been in working order for some time.

Thomas Hanbury, who prevented it from being broken up, and, with his usual liberality, presented it to the Society. The Society dates back more than 100 years, having been founded as long ago as 1804 by Mr. Thomas



Photo by] [Langfrier, Ltd.

LORD BALFOUR OF BURLEIGH, K.T., WHO REPLIED FOR THE ROYAL HORTICULTURAL SOCIETY.

struction of the students. We have no reason to think that this will be the case, but at the very commencement it should be clearly understood by the Council what is expected of them by the Fellows, and it is that energetic research shall be made into such subjects as were mentioned in our issue for April 13 last, and which were quoted by Lord Avebury in his opening speech at Wisley. From time

THE company which assembled at Wisley for the opening ceremony consisted of about ninety ladies and gentlemen. Amongst those present were the President Sir Trevor Lawrence, Bart., Lord Avebury, Lord Balfour of Burleigh, Sir William T. Thistleton Dyer, Sir John T. D. Llewelyn, Sir Albert K. Rollit, Sir William Vincent, Sir William Chance, Sir Thomas H. Elliott, Prof. Michael E. Sad-



Photo by] [W. Crooke.

SIR THOMAS ELLIOTT, K.C.B., SECRETARY TO THE BOARD OF AGRICULTURE.

ler, Mr. Jeremiah Colman, Sir Geo. Watt, Mr. Harry J. Veitch, Mr. Arthur W. Sutton, Mr. W. A. Bilney, the Rev. W. Wilks, most of the members of the Society's Council, and of the Scientific Committee, and a few friends connected with the Surrey County Council. Luncheon was served in the gardens, at which Sir Trevor Lawrence presided. The toast of the Royal Horticultural Society was proposed by Lord Avebury in the following terms:—

While very sensible of the honour you have done me in inviting me to open this interesting laboratory, I cannot but feel, especially when I look round, that there are others who might have done so much more appropriately. One name especially—that of my friend Sir Trevor Lawrence, your president, who is himself so great an authority, and who has done so much to bring the Society to its present climax of prosperity—will occur to everyone.

As we stand here to-day, two men will be in all our thoughts—Mr. Wilson, whose loving care and horticultural skill originally made the garden what it was, and Sir



Photo by]

[The Dover Street Studios.

PROFESSOR MICHAEL E. SADLER, LL.D.

Andrew Knight, Sir Joseph Banks, and other distinguished botanists, but for many years it vegetated rather than flourished.

When your President was elected in 1885, the Society had 1,108 members, a goodly number certainly, but not enough, and the Society was in some pecuniary difficulties. Owing largely to his ability and energy it has now nearly 10,000 members, has assets without counting Wisley of some £70,000, and an annual income of £18,000.

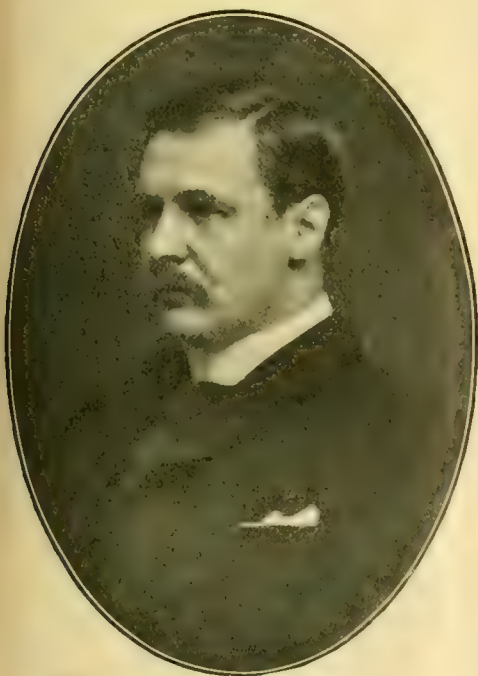


Photo by]

[Elliott & Fry.

SIR WILLIAM CHANCE, BART.

to time problems arise in connection with the combating of fungus diseases and insect pests, and in other matters concerned with the cultivation and forcing of flowers, fruits,



Photo by]

[Mayall & Co., Ltd.

SIR WILLIAM VINCENT, BART., J.P., WHO RESPONDED FOR THE SURREY COUNTY COUNCIL.

Your centenary in 1904 was marked by the erection in Vincent Square of an exhibition hall and library costing £42,000, raised mainly by private subscription, and also by

Sir Thomas Hanbury's munificent gift of this property—one of his many public benefactions. Mr. Wilson, one of our many City men who have taken a warm interest in science, devoted his leisure during 24 years to the planting, arrangement, and development of the garden, which comprises 60 acres.

In accepting this important gift you have, I understand, two main objects in view:—

(1) The improvement of horticulture by giving the best possible training to a certain number of young gardeners, and

(2) The promotion of horticultural and botanical science by experiment and investigation.

The erection of this laboratory and research station meets a long-felt want in connection with the Society's work. In the United States and in our Colonies there are several such stations under Government supervision and maintenance, but in the home country the initiation, direction and support is left to private enterprise. The good work being done at the Royal Botanic Gardens, Kew, at the Botanic Gardens of Cambridge, Oxford, Edinburgh and other Universities is well known and appreciated, as is also the experimental work for some years past undertaken at Rothamsted by the late Sir John Lawes and by the Duke of Bedford at Woburn.

Among "the subjects it is hoped to experiment upon in the near future are soil-sterilisation by steam as a means of destroying pests of plants which live in the soil; an investigation into the influence of sterilisation on the plants cultivated in the soil; study of the bacterial flora of the soil; etherisation of plants; and certain plant diseases. Each of these subjects will entail a large amount of laboratory work, as well as experiments in the garden."

When we look round us at the endless variety of trees, shrubs and herbs, no two alike in their form, their leaves, their flowers, their fruit, or their seeds, and when we reflect that for every difference in form and texture, in colour or scent, there is some cause and explanation, comparatively few of which are yet known to us, we see what a rich and beautiful field of enquiry botanists have before them.

In fact, the range of research and enquiry is so wide as to be practically inexhaustible; I cannot doubt that, in addition to its other services to the community, the Society will, in connection with the garden, do much to promote horticulture both in its æsthetic and scientific aspects, and I have much pleasure in proposing the toast—Prosperity to the Royal Horticultural Society.

Lord Balfour of Burleigh, replying, referred to the progress the Society had made since Sir Trevor Lawrence became president, and, after mentioning some details in connection with the membership and income, said twenty years ago the Society's investments consisted of a debt of £1,100; they had now £26,000 besides real property. The predominant feeling in their minds that day was that they were opening up a new era of prosperity by making the practice and theory of horticulture go hand in hand. In that they were like the sister pursuit of agriculture. A few years ago there was almost a war between the practical and the scientific agriculturist. They looked upon each other with mistrust and contempt, but all that had now changed. If science were of use to agriculture how much more was it of use to horticulture? He did not belittle agriculture, for in a humble way he was an agriculturist, but, after all, the agriculturist only dealt with about a dozen different kinds of plants and half-a-dozen different kinds of animals,

whereas the horticulturist had thousands of plants to deal with, plants from every part of the world. The work the Society were undertaking was very necessary. Those engaged in the practical work of gardening came from a class who, when they had families, required to consider carefully how long they could keep their sons at home, and the temptation to turn them out at the earliest possible day to help the earnings of the family was a very great one, and, if it were yielded to, was likely to do a greater amount of harm to the young gardener than to a youth in any other profession at all similar.

Sir William Chance proposed "The Board of Agriculture," and, referring to the liability incurred by the Royal Horticultural Society in establishing a scientific department, besought Sir Thomas Elliott to convey to Lord Carrington such an idea of the proceedings that day that pressure might be brought to bear on the Privy Purse in favour of granting some degree of State aid to the scheme.

Sir Thomas Elliott, Secretary to the Board of Agriculture and Fisheries, contrasted official action with private enterprise, and remarked that when official action went on too quickly, private enterprise was apt to recede. But he was glad to be there that day, because in one instance recently politicians had forgotten their politics, and the Legislature had passed "The Destructive Insects and Pests Bill." This would probably mark the commencement of a new era. The Act armed the Board with considerable powers, and the Board would be careful to consult with its specialists before using those powers in particular instances. The Board, commencing with what appeared at the moment to be nearest to their hand, had instituted a crusade against the American Gooseberry-mildew, a disease which threatened to do considerable mischief in this country. In conclusion, Sir Thomas Elliott assured the company that his department would consider the needs of their horticultural clients just as much as they considered the needs of their agricultural clients.

Professor Michael E. Sadler proposed "The Surrey County Council," and complimented this authority upon the liberal patronage they had extended to horticulture in connection with their elementary schools and in other ways. In future, said Professor Sadler, the Council would elect year by year a number of boys from the schools, and these boys would be received at Wisley by the Royal Horticultural Society free of cost. They would receive at Wisley a scientific and practical education extending over two years. In September next a commencement would be made by the Council selecting five boys. Reference was then made to the historic character of the Wisley district, and mention made of William of Ockham, Thomas Day, and William Cobbett, all of whom had lived in the locality.

Sir William Vincent, Vice-Chairman of the Surrey County Council, after referring to the large amount of money the Council had to spend on the upkeep of the roads, said that last year the Council spent on special subjects (of which horticulture was the principal) a sum of £614. The estimates for the current year included a sum of £750 for similar purposes. Last year there were organised gardens in connection with 59 of the elementary schools, at which 993 scholars received instruction in gardening. Thirty-five of the teachers had spent their vacation at the South-Eastern Agricultural College at Wye, for the purpose of acquiring gardening knowledge.

Sir Trevor Lawrence, Bart., expressed the thanks of those present to Lord Avebury, after which he read an extract from a letter received from Sir Joseph Hooker in reply to a letter of congratulation sent to Sir Joseph on the attainment of his ninetieth

birthday. Sir Trevor said the progress of the Society had been most satisfactory, but it was not due to himself or his own work, but largely to the Council and the Rev. W. Wilks, their excellent secretary.

Sir John T. D. Llewelyn, Bart., said that Sir Trevor Lawrence had shown good generalship in that he had selected such excellent officers as the secretary and garden superintendent to carry out the work of the Society, but beyond that he was certain that much of the Society's success was due to the President, and it was owing to his influence that the questions connected with the establishing of the Hall and gardens had been settled so satisfactorily.

Thus terminated the formal proceedings connected with the opening of the Research Station. Many of those who most desired the Society to undertake this work have passed away before the consummation of their ideas, and three names seem particularly present in our mind, those of the late Sir Michael Foster, Sir Thomas Hanbury, and Dr. Maxwell T. Masters. Dr. Masters has written on this subject several times in these pages, even during the present year.

We have pleasure in publishing the portraits of most of the speakers at the opening ceremony.

THE SWANLEY HORTICULTURAL COLLEGE.—

The inaugural address of the nature study course will be given on Saturday July 27, at 5 p.m., by Sir DOUGLAS FOX. The course promises to be an interesting one, over 60 students having entered for it. A copy of the syllabus may be obtained from the secretary, Miss M. KEKEWICH.

READING UNIVERSITY GARDENS.—

Professor PERCIVAL has been appointed Professor of Agriculture and Horticulture at the Reading University, and Mr. CHARLES FOSTER, superintendent of the experimental garden, has been made Assistant Director of Horticulture. Those who have seen the excellent cultivation that is practised in this garden will be glad to know of Mr. FOSTER's appointment.

THE MIDLAND AGRICULTURAL AND DAIRY COLLEGE.—

The annual meeting will be held at Kegworth on Monday, July 29, at 3.15 p.m., when the report on the year's work will be presented. Sir JOHN ROLLESTON will address the meeting, and present the certificates gained during last session.

BOTANICAL GARDENS, CHRISTCHURCH, NEW ZEALAND.—

We are informed that Mr. JAMES DAWES has been appointed superintendent of these gardens. Before leaving England Mr. DAWES was head gardener for upwards of 20 years to Lord BIDDULPH, at Ledbury, Herefordshire, from which establishment he frequently exhibited fruit at the principal shows.

A CURIOUS NESTING PLACE.—

The following paragraph is taken from a recent issue of the *Devon and Exeter Gazette*:—"A strange find is recorded from Crediton. As some Bananas were being pulled from a large bunch a birds' nest, containing two eggs, was revealed. The nest was composed of cocoanut fibre and sticks. The eggs were dark spotted and quite perfect. It is supposed that the bird left the nest and was unable to find its way back. As the Bananas grew the nest and eggs were concealed and preserved." That the bird was a native of the country where the Bananas grew is evident from the fact of the nest being partially composed of cocoanut fibre, and it would have been interesting to know the name of the bird, which could have been ascertained by submitting the eggs to an ornithologist.

EXPERIMENTS IN ACCLIMATISATION IN THE TROPICS.—Until the present time researches in acclimatisation of European and other plants have been confined to relatively few species, notwithstanding which interesting results have been obtained. These have proved it to be essentially necessary to experiment with every species, it having been observed that two species of the same genus, and natives of one and the same climate, behave in a perfectly contrary manner in the Tropics, the one vegetating as in its native country, the other dying out. *Artemisia vulgaris*, a well-known European plant, growing in the Botanical Garden at Saigon, ripens its seeds there. *Sambucus canadensis*, a Canadian Elder which withstands an enormous degree of cold in its native country, succeeds quite well in a botanical garden in Central Africa, not far distant from the equator. *Taraxacum officinale*, the common Dandelion of Europe, grows between the Tropics; and the common Milk Thistle (*Carduus Marianus*), a most troublesome weed, found almost everywhere, is likewise a tropical weed. It is likewise a fact that many plants, natives of the warmer regions of the world, as, for example, those of the Mediterranean region, will not exist in tropical countries, and it is tolerably certain that here lies an enormous field for the experimentalist's work. "When I have established myself in Java," writes M. BUYSMAN, of Middelburg, Holland, in *Die Gartenwelt*, of June 15, "I shall make experiments with every kind of plant of which I can obtain seeds, and eventually record the dimensions arrived at by each individual plant. That plants which will withstand the heat of tropical countries usually reach enormous dimensions is a well-known fact. A resident in Queensland—that is, in tropical Australia—informs me that an Oleander growing in his garden has reached a height and diameter of 36 feet. In Java, with its magnificent climate, experiments may be carried out during the entire year, and I intend to carry out extensive researches in acclimatisation, the results of which I hope will be of importance to horticulture in general."

THE BUD DISEASE OF LILAC.—In parts of Germany, a condition of the buds of the common Lilac has been noticed, to which has been given the names "Bud disease" and "Witch-knot," or "Witches' broom," under which two last names something rather different is understood. The cause of the disease has been determined by Dr. R. LAUBERT to be a mite so minute as not to be visible to the naked eye—*Phytoptus Loewi*, one of the gall-mites which are the causes of so many diseases and malformations in plants. This minute creature is impervious to heat and cold, and is capable of existing in the perfect state throughout our coldest winters. It is seen as a reddish mass under the bud scales of the plants, consisting of numerous cylindrical caterpillar-like forms $\frac{1}{2}$ mm. long, 1-20 mm. broad, furnished at the fore end with four short legs. These mites were discovered in diseased buds taken from Lilac bushes on January 25 last, which had been exposed to 12½° and 20° Celsius. They became lively after being in a room for a short time, so that neither the great cold nor the sudden warmth of the room had any injurious effects on them. As with the Black Currant bud mite, so with this new-comer; it is a matter of extreme difficulty to discover a method reasonably practicable of dealing with this enemy of the gardener. The likeliest means for their destruction would be to apply some kind of wash or powder to the affected bushes in the second half of the month of May, when the mite leaves its place of concealment and is searching for a new one. The notice from which these details are taken appeared in

Die Gartenwelt for June 15 last, from the pen of Dr. LAUBERT, and it may induce other observers to give their experiences concerning this mite, for there is but little existing literature on the subject, beyond disconnected notices concerning bud disease and witch-knot disease of *Syringa*, as, for instance, those of LOEW (Vienna, 1879); WITTMACK (Berlin, 1882); FRANK, 1896; and VON TUBEUF, 1901 and 1905.

SENSITIVENESS OF THE STIGMA IN TORENIA FOURNIERI.—At this season the flowering of *Torenia Fournieri* is at its best, and it may not be without interest, writes C. RIMANN in *Die Gartenwelt* for June 22, to observe the movement of the stigma when touched. The flower of this plant exhibits an extended stigma, at the end of which are two slightly-bent-asunder segments. When the stigma is touched with a lead pencil point, or camelhair brush, the segments close in the manner of the leaves of *Dionæa muscipula*. A further discovery showed that these expanded again after a short period of time. Flowers were observed which remained closed. When pollen was conveyed on a pencil to the stigmas, it was noticed that these segments of the female organ became permanently closed, so that one came to the conclusion that the closing was due to effective pollination of the flowers, and the movement observed was intended to hold fast any insect which might be a pollen carrier; but as an insect might visit a flower and bring no pollen, the opening of the segments after an interval would allow it to escape.

THE BEST FRUITS.—The Pomological Section of the National Horticultural Society of France has published a work for the use of members who are interested in fruit-growing. In size, *Les meilleurs Fruits*, au début du xxe siècle, is 11in. x 7in., and consists of 632 pages of well printed text. It is issued in paper wrappers and liberally illustrated in black and white. The general plan of the work, like most of the publications of this society, enables the reader to have easy access to the information contained in it. The book begins with a brief history of the science of pomology, which is followed by a treatise on diseases and insect pests, with directions for the necessary treatment. The body of the work contains a very full account of the varieties of fruits selected by the compilers, and they number in all about 250, all of them being arranged in alphabetical order. The descriptive matter gives the name, synonyms, origin, followed by details concerning the tree or plant, as the case may be, foliage, and full description of the fruit. There are several good tables, one of which deals with the season of maturity of the fruits recommended: another, with the form it is considered best for the trees to be grown in. Notwithstanding the size of this work, reference is greatly facilitated by the excellent arrangement. The book is primarily intended for members of the society, and we do not know whether it can be obtained by the general public, but in any case it is an acceptable addition to pomological literature.

VITIS VULPINA.—A correspondent writing on this species in the issue of the *Oesterreichische Garten-Zeitung* for July states that there is no more suitable plant for quickly covering tree trunks, buildings, walls, fences, and arbours and in particular in forming festoons along or above garden fencing, than the Fox Grape vine, *Vitis vulpina*, a smooth-stemmed, tall, climbing species, which makes annual shoots 9 feet in length. The heart-shaped leaves of this plant are of a bright green colour on both sides; the greenish-yellow flowers which appear in June are fragrant and the unpalatable berries that follow are of a dark blue tint. The effect of this

but little-known plant is exceedingly graceful when the shoots are trained festoon-wise over iron standards or lattice work. For such purposes the plants are set out at distances of from 2½ to 3 yards, or wider, apart, and a pole of iron or hard wood is placed to each plant with suspended chains stretching from one to the other.

Publications Received.—*The Dahlia News (America)* for June.—*Annual Report of the Royal Botanic Garden, Calcutta, and the Lloyd Botanic Garden, Darjeeling, for the year 1906-1907.*—*Bees for Pleasure and Profit*, by G. Gordon Samson. Published by Crosby, Lockwood and Son, price one shilling.

HORTICULTURE IN EGYPT.

(Concluded from page 42.)

TEMPERATE FRUITS.

The number of fruits which can be successfully cultivated in Egypt is remarkable. Among tree-fruits from temperate regions the most extensively grown is the Mish-mish, a very poor variety of the Apricot, which is common throughout the north of Africa from Egypt to Morocco. The trees are almost always grown from seeds. There is little doubt but that with reasonable treatment the better varieties of Apricots could be grown with equal success. Plums, Pears, and Peaches are all of poor quality, but what is possible by proper cultivation and the introduction of better varieties has yet to be proved, although the presence of about half a dozen Plum trees of European varieties bearing good crops of excellent fruit places the question in the case of this fruit beyond doubt.

Large quantities of excellent Strawberries are grown around the towns in Upper Egypt. The plants continue bearing for six months, and the value of a good crop is about £50 per feddan: in one case which came under my notice, the crop was sold for £72 per feddan. The expenses connected with the cultivation of this crop, including rent and water charges, are rarely more than £30. Many Europeans grow their own Strawberries, as the native has a habit of licking off any dirt which happens to be present on the fruit!

The most important sub-tropical fruits are the Grape and the Fig, and of these good varieties exist, therefore both are profitable crops. Pomegranates are also common throughout the country, but the fruits are usually picked when green for use in dyeing and tanning leather. If they are not gathered until they are ripe it is necessary to enclose each in a muslin bag, to ward off a caterpillar which lays its eggs inside the pulp.

The Japanese Date Plum, *Diospyros Kaki*, grows very freely and bears heavy crops of luscious fruits, which sell in the market at from 1½d. to 2½d. each. Unfortunately the tree is not common, but it is easy of propagation, and its planting will no doubt spread quickly throughout the country. The Japanese Loquat is more common, but this fruit is much less esteemed than the preceding. The most important ground-fruits in Egypt are Water and Sweet Melons, and Tomatos. All these grow with the utmost ease without staking or other care except watering.

TOMATOS.

Large numbers of persons are engaged in the marketing of Tomatos, and a considerable export trade is done with Austria, Russia, &c. Last year the value of Tomatos exported amounted to more than £20,000.

Purely tropical fruits appear to thrive in Egypt, as well as those from more temperate regions, in spite of the cold weather often experienced in winter. Mangos are bearing good crops at the present time, and bringing enormous profits to their owners. Sapodilla Plums, Indian Damsons, Avocado Pears, Guavas and Sweet Sop are all growing well, in addition to various other fruits of minor importance, such as the Rose Apple and Brazil Cherry. Unfortunately, however, no one has been sufficiently enterprising to propagate them in quantity, so that in the case of many species there are but few trees in the country. Something will no doubt be now done in this matter by the horticultural societies.

When the supply of these tropical fruits becomes sufficiently great to allow their being exported, Egypt will be able to send to the European markets kinds which are as yet unknown outside tropical countries.

of the industry, and starting operations. For English gardeners with a little capital and business training, there are good prospects in all branches of commercial gardening in Egypt. *T. W. B.*



FIG. 33.—AMPHICOME EMODI: FLOWERS ROSE-COLOURED, WITH ORANGE-TINTED THROAT. (Exhibited at R.H.S. meeting by Messrs. James Veitch & Sons.)

In the production of vegetables, as in the cultivation of fruits, there is a great future for the country. The quantity of Cabbages and other vegetables exported yearly is growing, and it is not any exaggeration to say that Egypt will at no distant date become the market garden of Europe. Several land companies and private land owners are recognising the vast possibilities

of the industry, and starting operations. For English gardeners with a little capital and business training, there are good prospects in all branches of commercial gardening in Egypt. *T. W. B.*

AMPHICOME EMODI.

THE genus *Amphicome* consists of only two species, both natives of Northern India. They are closely allied to the *Incarvilleas*, and the plant now illustrated at fig. 33 was described by Dr. Wallich as *Incarvillea Emodi*. *Amphicome arguta* was the first species to flower in this

country in the Horticultural Society's garden in 1837. It is taller and more elegant in growth than *A. Emodi*, the leaves and flowers being smaller. It grows at an elevation of 6,000-8,000 feet in the North-west Himalayas.

A. Emodi received an Award of Merit from the Royal Horticultural Society, when exhibited by Messrs. James Veitch and Sons, Chelsea, on June 25 last. It is the more ornamental of the two species for garden purposes. The flowers are larger than those of *A. arguta*, and very much resemble *Incarvillea Delavayi*, though smaller. The racemose inflorescences are 1 foot to 2 feet in height, and they bear numerous flowers. These open in succession, there being sometimes as many as 36 in all. Some of the racemes are branched. The flowers are rose-pink in colour, with an orange throat. The habit of the plant is dwarf, almost creeping; the leaves are green, glabrous and bear numerous leaflets. Seeds of this plant were received at Kew from India in 1852, and being grown in a cool pit, flowers were produced in 1855. *A. Emodi* inhabits the mountains of Emodi. The species is figured in the *Botanical Magazine*, tab. 4,890.

Although found at high altitudes, neither of the species of *Amphicome* is hardy in this country, although in the mild climate of the south-western counties the plants will live through the winter if protected from excessive moisture and severe frosts. The greenhouse affords the most suitable place for the cultivation of the plants. Propagation is effected by seeds and cuttings. The seeds should be sown in spring, and some of the plants thus raised will flower in the second year. Cuttings can be rooted in sandy soil from March onwards. The most suitable soil for use in potting is one consisting of fibrous loam, peat or leaf-mould and sand. It must be well drained, as *Amphicomes* dislike excess of water at any season, and during winter they require very little water. *O.*

HOME CORRESPONDENCE.

CARNATIONS AT STANLEY PARK.—At Stanley Park, Stroud, the residence of Sir William Marling, Bart., *Souvenir de la Malmaison* Carnations are grown in large numbers. The plants are accommodated in a large span-roofed structure, and they are in the finest condition of culture. The varieties include *Princess of Wales*, *Old Blush*, *Margaret*, *King Oscar*, *Duchess of Westminster*, *Mercia*, *Grace*, *Lady Grimston*, *Cecilia*, *Albion*, *Mrs. Trelawny*, *Mrs. Martin Smith*, *Lord Welby*, *Nell Gwynne*, and many others. Mr. Walton, the gardener, is to be congratulated upon the beautiful show of these flowers. *William Driver, Hope Cottage, Stonehouse.*

PINES ATTACKED BY PERIDERMIIUM.—Small trees of *Pinus Strobus*, *P. Lambertiana*, *P. monticola*, and *P. aristata* growing in these gardens have been attacked by this fungus. From a close examination of the infested trees, the progress of the disease appears to be as follows:—The small branches are attacked first and the bark around the branch for a distance of a few inches swells, and later small bladders are formed on it. These burst in April and shed innumerable spores, which, to the naked eye, resemble yellow pollen. Just previous to the ripening of the spores the disease may perhaps be checked, and the tree saved by cutting away the affected parts, but, unfortunately, the latter being small, they are easily overlooked. The diseased parts are only conspicuous when the bladder-like swellings burst, and they are more often present where the branches are thickest. The following season the disease encircles some of the larger branches, and frequently the main stem, the rings being sometimes 9 to 12 inches in width. Much resin is exuded at the seat of injury; the wood at this spot is rendered peculiarly soft, and when cut through it is found to be soaked with resin. In spring the colonies of yellow spores are very noticeable. When the central stem is affected there appears to be no remedy, and the part above the injury soon dies. In the case of our trees as many as possible of the diseased parts have been removed and burnt, and the remainder, together with the soil, sprayed with a solution of sulphide of potassium. *J. Comber, The Gardens, Nymans, Crawley, Sussex.*

STRAWBERRY THE LAXTON.—I read Mr. L. Castle's defence of this new Strawberry (see p. 13) with interest, because there can be no doubt that it does splendidly at Bedford, where it is planted in large breadths and fruits heavily. When it was presented to the Fruit Committee of the Royal Horticultural Society, the variety raised hopes, for not only were the fruits rich in colour and of good form, but they were specially rich in flavour. Has the cause of its failure in some directions been due to a too rapid increase from late weak runners, or to the plant requiring stiff, strong loams, such as is seen at Bedford, in preference to lighter soils? Mr. Markham's practice of obtaining plants by selecting the earliest runners from young non-fruited plants is no doubt the best, and it is the plan most generally adopted by good growers. Were The Laxton propagated in this manner only, it is very possible that good results would follow. It is certainly a delicious fruit. D. A.

ROSE.—I recently discovered a Rose with flowers somewhat resembling the variety Austrian Copper in colour, but rather brighter in tint and much smaller in size. The foliage and habit of growth were like those of the common Sweet Briar, and the wood was covered with a bronze-coloured bark. Upon examination, I found this was an old stock, upon which had been worked, presumably, a trailing variety, as it was planted at the foot of a garden arch. The plant had evidently been in this position many years, as the wood at the base was very large, and showed evidence of much pruning. This stock was unknown to me, and when reading Dr. Bonavia's note on p. 14, I thought that my variety might be the same as his. Unfortunately I am not able to send specimen flowers for comparison, as the plant has since been destroyed. C. R.

SWEET PEAS TO NAME.—As one of the judges of the audit class for Sweet Peas at the recent Sweet Pea Exhibition, I wish to say that it was with extreme reluctance myself and colleagues found it needful to disqualify three collections. In two cases flowers that were probably Lord Rosebery were shown as John Ingman, and in one other exhibit two spikes of a somewhat similar, yet diverse variety were found in a vase in which the rest of the flowers were properly named. In this latter case no excuse can avail, as anyone could readily see that the two spikes were distinct from the true variety. In the case of the two other collections, it is probable that the exhibitors received from some seedsmen the variety under the name of John Ingman, and showed it in the belief that it was correctly named. If that were so, I would suggest that in future the competitors be required to state on their name cards the name of the vendor from whom the seeds were obtained. That might lead to the exercise of greater care. A. D.

A HEAVY THUNDERSTORM IN NORTH WALES.—On the 21st inst. we experienced a terrific thunderstorm that caused much damage to the growing crops. The lightning killed several sheep, and shattered some trees to pieces. In less than three hours 1.75 inch of rain fell, and the rain was accompanied by hailstones as large as marbles. One farmer had his Swedes in a field washed away by the heavy rush of water. Many things in the gardens are splashed to such an extent that they are useless for the time being, and the effect of this is seen as high as 2 feet 6 inches from the ground. Other plants were battered to the ground. The storm lasted for more than 13 hours. J. S. Higgins, Rhinog Gardens, Corwen.

STORM IN STAFFORDSHIRE.—We experienced a severe thunderstorm in this neighbourhood on the 22nd inst., between 1.30 and 4.30 a.m. On this estate a very large Oak tree was torn completely up and the bole was split into four large pieces; one piece weighing about 10 cwt. was thrown a distance of 30 yards, and some of the other pieces were hurled 100 yards. The top of the tree finally rested where the roots of the tree should be. Arthur Bateman, Hunts Hall Gardens, Tamworth, Staffs., July 23, 1907.

THE INTERNATIONAL HORTICULTURAL EXHIBITION, 1866.—A few weeks ago the *Gardeners' Chronicle* published a photograph of the members of the committee in connection with the lamented death of Dr. Masters. It was mentioned that Mr. Harry J. Veitch, V.M.H., is now the only survivor. In scanning the group my attention was arrested by a remarkable likeness between one of the

gentlemen figured and a well-known engineer, Mr. Edward Easton, who has a country house in this district. This morning I met Mr. Easton and mentioned the circumstance. He smilingly assured me that he is the same Mr. Easton as formed one of the famous committee. Mr. Easton gave me some very interesting recollections of the opening day, one item which dwells in his memory being that he was compelled to collect admission money in his hat! Walter P. Wright, *The Grey House, Lyminge, Kent*, July 22, 1907.

SUMMER PRUNING OF FRUIT TREES.—A large percentage of prominent woodbuds on strong shoots of the current year's growth are, as the result of summer pruning, converted into fruit-buds which will blossom the following spring. A number of the less prominent woodbuds on the weaker and later summer-pruned shoots are changed into embryo fruit-buds that will duly mature during the following spring, summer and autumn, and develop blossoms in the spring of the next year. H. W. Ward, Rayleigh.

NEW HYBRID TREE PÆONY, MADAME LOUIS HENRY.—This apparently beautiful and interesting hybrid is described by its raiser, Monsieur Henry, in the current number of the *Paris Revue Horticole*. It is botanically interesting as being the first result of an endeavour to fertilise the flowers of the golden yellow-flowered P. Delavayi or P. lutea with the pollen of one of the rose-coloured forms of P. Moutan. The initial difficulty that had to be overcome in effecting this cross was that P. lutea flowered about a fortnight earlier than the Moutan varieties, but pollen was ultimately secured from one of the handsomest of the Moutan varieties, named Elizabeth. Seventeen seeds were obtained, only five of which germinated, of which only two could be reared. The flower is said to show all the characteristics of both parents, borrowing from its pollen bearer the beautiful red ground colour with which is mingled the bright, intense yellow of the seed bearer, producing a beautifully striped flower at least three times the size of that of P. lutea, which much resembles the flower of a Trollius. W. E. Gumbleton.

SOUVENIR DE LA MALMAISON CARNATIONS.—A magnificent collection of these plants in flower was noticed at Luton Hoo Gardens on the occasion of a recent visit, and Mr. Metcalfe, the gardener, is to be congratulated on having such a clean, healthy stock. This grower layers his plants early in the season, and the largest he places in 9-inch and others in 6-inch pots. This does not provide much root room, but it is sufficient, as the larger plants were many of them upwards of 6 feet in height and flowering profusely, some of the blooms being upwards of 5 inches in diameter. The collection at Luton Hoo includes the varieties Jane Seymour (pink), Princess of Wales (pink), Thora (flesh colour), Calypso (blush), Lord Welby (red, an extra large variety), Grace (rose-pink), W. H. Cutbush (crimson), H. J. Jones (dark crimson), King Arthur (dark crimson), Mrs. Trelawny (light red), Churchwarden (scarlet), and Duchess Consuelo (yellow). Among the many improvements made in these gardens, it is pleasing to find that the young gardeners have not been forgotten, for a new bothy has been built, fitted with every convenience and means of comfort. This thoughtful consideration and kindness to the employees on the estate is much appreciated. W. H. Divers, Belvoir Castle Gardens.

NAMES FOR YUCCAS.—The following is a supreme effort at name-making which would be hard to beat, and is a list of Yuccas—60 in number—which have come to hand in one lot. When the Yuccas increase at this rate the lists of the future will be quite formidable. J. Smith, Newry. [Mr. Smith appends a list containing 50 names.—Ed.]

BONES FOR A VINE BORDER.—It is perfectly true that half-inch bones are in most soils a long time in decaying, and consequently they yield but little nourishment to vines. I have long discontinued using them, although I usually prepare one or more new borders every season, and now use steamed bone flour with good results. I have no means of knowing how long this material lasts in the border, for it soon becomes invisible. A good dressing of powdered bones should be applied to the surface of the border every alternate autumn, and it will speedily find its way down into the soil. In one

case that came under my notice, half-inch bones almost wholly disappeared in one season, but the soil in which they were placed was very deficient in lime. Wm. Taylor, Batu.

—Is W. P. R. engaged (p. 14) in knocking a hoary tradition on the head, when he impugns the value of half-inch bones as a manure for vines, and, as a natural corollary, other plants? The tradition has had in its day many strong believers, and amongst others the late Mr. A. F. Barron, whose book on the vine is still the standard work on the subject, and who advises the use of small bones because they continue to furnish plant food for many years. W. P. R.'s experience seems to have been that half-inch bones are practically insoluble. Their ready conversion into plant food may largely depend on certain chemical constituents in the soil. Mr. Barron, however, lays emphasis on the value of bone meal, dissolved bones, and horn shavings (practically soft bone), as being most valuable manures. A.

GOOSEBERRIES AND CURRANTS.—It is far from being a pleasant vocation to pose as a prophet of evil. Still, some writers—even scientists—seem to revel in the function. In the observations on the Gooseberry-mildew under the name of Mr. Salmon, I observe it is said: "The disease, which unless resolutely stamped out, will gradually invade and ruin their Gooseberry plantations just as the 'Big Bud' mite has ruined Black Currant plantations." It is an odd comment on this prediction that we have never had finer crops of both Gooseberries and Black Currants than this year. I think, when the crop returns are published in your pages, it will be found that this state of things is widespread. That being so, one fails to see why indulgence should be given to such gloomy anticipations. They remind one of what was said many years ago respecting the Potato crops, yet without repressive legislation Potatoes to-day are better in health and strength than ever. After all, the optimistic cultivator is the more reliable worker and adviser. A. D.

THE WEATHER IN DURHAM.—We have never before experienced such a cold, wet spring and summer as those just past. The Apple crop is a complete failure here, for although we have a large number of trees, not a single fruit is to be seen upon them, except in the case of three young trees planted at the foot of a wall. Early in the spring there was every prospect of an abundance of bloom, but owing to the continued cold and wet weather the blossoms rotted on the trees. Other fruits, including Plums, Currants, Gooseberries, Strawberries, &c., are promising fairly good crops. Pears are scarce. I have not seen an account of the Apple crop in southern counties, but am anxious to do so. Hailstones fell in the first week of June, at which time we also had cold, frosty nights. W. H. Lund, Egglestone Hall Gardens, near Darlington.

SOCIETIES.

ROYAL HORTICULTURAL.

JULY 24.—The ordinary fortnightly meeting of the committees took place on Tuesday last in the Society's hall in Vincent Square.

The ORCHID COMMITTEE recommended four Awards of Merit to novelties.

The FLORAL COMMITTEE recommended four Awards of Merit, and there were as many as 31 groups staged for inspection by this committee.

The FRUIT AND VEGETABLE COMMITTEE recommended an Award of Merit to a known variety of Strawberry, namely, Fillbasket.

At the afternoon meeting 78 new Fellows were elected. A paper on "Rare Trees and Shrubs in the Open Air" was announced for reading by the Hon. Vicary Gibbs, of Aldenham, but this gentleman was unable to be present, and the paper was not delivered. The lantern slides, however, which were to illustrate the paper were shown on the screen, and the secretary, the Rev. W. Wilks gave a short description of each as it was presented.

Floral Committee.

Present: Henry B. May, Esq., in the chair; and Messrs. C. T. Druery, Jno. Green, T. W. Turner, R. C. Ncutt, J. T. Bennett-Poë, J. W. Barr, H. J. Cutbush, W. Howe, Geo. Reuthe,

Jas. Douglas, Arthur Turner, Chas. Dixon, H. J. Jones, C. E. Pearson, C. E. Shea, W. P. Thomson, E. H. Jenkins, W. J. James, R. C. Reginald Nevill, E. T. Cook, and R. Hooper Pearson.

Lord ALDENHAM, Elstree (gr. Mr. E. Beckett, V.M.H.), displayed a large and interesting exhibit of sprays of flowering and ornamental-foliaged trees and shrubs. The exhibit was of much educational value, as affording a knowledge of showy species and varieties for the shrubbery and garden. The display was arranged across the whole of the platform end of the Hall on one long table. Some of the best specimens amongst this fine collection were *Buddleia variabilis*, *Acer rubellum*, *Philadelphus grandiflorus*, *Jasminum revolutum*, *Cassinia fulvida*, *Cistus laurifolius* (finely in flower), *Zenobia speciosa*, and *Berberis Darwinii*. Near by, and from the same gardens, was a well-flowered batch of *Streptocarpus*, with flowers in shades of violet, purple, pink, white, &c. The plants were in all cases abundantly flowered, those of the first-named colours being especially strong, with flower stems a foot or more in height. The white-flowered varieties were of dwarfier habit, but also very freely flowered. (Silver-Gilt Flora Medal.)

Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, showed a miscellaneous group of greenhouse flowering and foliage plants. *Lobelia Richardsonii* was shown on an elevated stand with long growths overhanging and terminating in bunches of pale blue-coloured flowers; it would form an admirable subject for planting in hanging baskets. *Impatiens Holstii* has flowers of a rich orange-scarlet shade; *I. The Sultan* is a magenta self-coloured flower. Boxes contained *Spiræa Bumalda* and the finely-coloured variety *Anthony Waterer*. *Ceanothus* "Georges Simon" has large terminal inflorescences of a pale pink colour. We also noticed a spray of the beautiful *Stuartia Pseudo-Camellia* described in our last issue, p. 51.

Messrs. H. B. MAY & SONS, Edmonton, showed big clumps of *Ixora Williamsii* (coral red), *I. Fraserii* (pale red), and *I. macrophylla*, in a collection of other flowering plants and choice Ferns. The last-mentioned *Ixora* was shown in 5-inch pots, each with a terminal head of bright-red flowers, the inflorescences measuring over 1 foot in diameter. Amongst the other flowering plants we may mention *Clerodendron fallax*, *Salvia* "Zurich," *Solanum jasminoides*, and *Hydrangea paniculata*. (Silver-Flora Medal.)

Messrs. BARR & SONS, King Street, Covent Garden, London, W.C., showed 13 species of *Eucalyptus* in small pots, raised from seeds sown in January of this year.

Messrs. S. BIDE & SONS, Farnham, Surrey, exhibited an extensive group of Roses, all of their new variety *Queen of Spain*. Some of the flowers were shaded pink, and others were cream-coloured, according to the age of the bloom. (Silver Banksian Medal.)

Messrs. W. PAUL & SONS, Waltham Cross, Herts., showed a pretty display of Roses in baskets, stands and boxes. Several were new, and one is described under Awards. Another new variety is *Mrs. Isabelle Milner*, a hybrid perpetual Rose, with white petals flushed with pink; *Marquise de Sinety* is also new—the petals are of a bronzy-yellow shade. The exhibit included *Pharisaer Celia*, *Perle des Jaunes* (bronzy orange), *Earl of Warwick*, *Konigin Carola* (pink), *Commandant Felix Faure* (dark crimson), *Prince de Bulgarie*, *Joseph Hill*, and many other varieties. (Silver Flora Medal.)

Mr. A. F. DUTTON, Iver, Bucks., had a superb lot of Carnations, border kinds in pots, being shown side by side with the American tree varieties. In the former section, Mrs. Forbes and Daffodil stood out conspicuous among those with self yellow-coloured flowers, while *Trojan* and *Albion*, among whites, were equally good. The tree varieties were shown in good style, and in the best varieties. The group was one of the finest of these flowers exhibited in the Hall during the present year. (Silver-Gilt Banksian Medal.)

Messrs. WM. CUTBUSH & SONS, Highgate, N., displayed Carnations of *Souvenir de la Malmaison* and border kinds. One handsome batch was of well-grown plants of the variety *King Arthur*, and as a companion to this fine scarlet-coloured variety was another group of the pure white *Trojan*. Of the "Malmaison" type were shown *Yaller Gal*, *Monk*, and *Princess of Wales*. (Silver-Gilt Flora Medal.)

Mr. JAMES DOUGLAS, Edenside, Great Bookham, displayed a fine collection of Carnations in about 60 varieties. The pick of both the border and the *Souvenir de la Malmaison* types were seen in this display, and all were shown in the best condition of culture. Amongst the border varieties were seen *Goldfinder*, of the shade known as apricot; *Miss Willmott*, a perfectly-formed flower of coral-pink shade; *Helen Countess of Radnor*, one of the finest of all, with flowers a rich crimson; *Cupid*; *Mandalay*; *Duchess of Wellington*; *Lady Hermione*. Amongst the *Souvenir de la Malmaison* varieties were noticed *Gemma*, of rose-pink colour with a trace of salmon; and *Maggie Hodgson*, the finest of all the dark-coloured flowers. (Silver Flora Medal.)

Mr. S. MORTIMER, Rowledge, Farnham, was awarded a Silver Flora Medal for a display of Carnations.

Mr. AMOS PERRY, Hardy Plant Farm, Enfield, arranged a water-garden on similar lines to that staged by him at the recent Holland House show. The quality of the exhibit, its conception, and mode of arranging left little to be desired, and from the group much instruction was gleaned. Amongst noteworthy plants in the display were the yellow-flowered *Calla* "Mrs. Roosevelt"; many good *Liliums*, such as *L. pardalinum*, *L. canadense*, *L. Grayii*, and *L. Humboldtii* magnificent; *Water Rushes*, *Spiræas*, *Gunneras*, *Bamboos*, and many other moisture or water-loving plants. On an adjoining table Mr. PERRY staged a collection of many of the best herbaceous plants in season, and in which *Oriental Poppies* were a notable feature. (Gold medal.)

Mr. MAURICE PRICHARD, Christchurch, Hants, showed seasonable hardy flowers of good quality. In the centre of the exhibit was a group of *Astilbe* "Silver Sheaf," a very floriferous variety. Another plant with tall spikes of white flowers is *Cimicifuga americana*. Two yellow-flowered *Richardias* were labelled *Solfatari* and *aurata*. (Silver Flora Medal.)

Mr. B. LADHAM, The Shirley Nurseries, near Southampton, showed a number of varieties of *Gaillardias* with flowers ranging from light yellow to shades of red. The best varieties were *Yellow Prince*, *Superb* (a fine, dark-coloured variety), *Aurora*, *Shirley*, and *Sulphur Gem*. Mr. LADHAM also showed bunches of perpetual-flowering *Pinks*.

Messrs. V. N. GAUNTLETT & Co., Chiddingfold, Surrey, showed about 40 varieties of *Iris Kaempferi*. *Kimono* is a fine flower, with broad, white segments that are tinged with blue. (Bronze Banksian Medal.)

Messrs. J. CHEAL & SONS, Crawley, Sussex, exhibited vases of Sweet Peas of popular varieties, and as a background were a number of hardy flowers, including the rose-coloured *Lupinus polyphyllus*, *Galega bicolor*, *Telekia speciosa*, *Chrysanthemum maximum* Mrs. Charles Lowthian Bell, a large-flowered form of this well-known herbaceous plant, with clear, white petals; *Eryngiums*, *Delphiniums*, &c.

Herbaceous *Phloxes* were displayed by Messrs. GUNN & SONS, Olton, Birmingham, in large, effective masses of distinct kinds. Their fragrance was very noticeable. A few of the best shown were *Etna*, *Iris*, *Sheriff Ivory*, *Eugene Danzanvilliers*, *Tapis Blanc*, and *Sylphide*. (Silver Banksian Medal.)

Exhibits of hardy flowers were also shown by Mr. JOHN FORBES, Hawick (Silver Banksian Medal); Messrs. T. S. WARE, LTD., Feltham (Silver Flora Medal); and Mr. G. REUTHE, Keston (Silver Banksian Medal).

Messrs. J. PEED & SON, West Norwood, S.E., filled a large table with double-flowered *Begonias* and *Gloxinias*.

A large table was filled by Messrs. WM. ARTINDALE & SONS, Nether Green, Sheffield, with showy hardy flowers in variety, and amongst these were fine *Lilies* and *Carnations* of the border section.

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, showed an interesting collection of hardy *Ericas*, including many forms of our native species, and hardy *Fuchsias* of the *Riccartonii* type in several varieties.

Mr. J. BRUCKHAUS, Orleans Nursery, Twickenham, showed a fine lot of ten-week Stocks. The plants in their large size and handsome spikes of fragrant flowers exhibited the highest degree of culture.

Messrs. CANNELL & SONS, Swanley, staged a fine assortment of Stocks, having complete plants pulled from the ground. The plants were free in flowering and of perfect bush-like habit of growth. A brilliant display of *Antirrhinums* was also exhibited by this firm.

Messrs. JAMES CARTER & Co., High Holborn, London, staged a very pretty display of Sweet Peas as a foil to their extensive exhibit of culinary Peas.

Vases of Sweet Peas of standard varieties were shown well by Messrs. JOHN K. KING & SONS, Coggeshall, Essex; and another good exhibit of these popular flowers was displayed by Miss ALEXANDER, Oakbank, Seal, Sevenoaks (gr. Mr. John T. Tubb). (Silver Banksian Medal.)

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, arranged a very pretty exhibit of Carnations, Roses, and Hydrangeas. *Rose Baby Dorothy* is a small polyantha variety, with big clusters of bright pink flowers.

Messrs. DOBBIE & Co., Rothesay, and Mark's Tey, Essex, showed a dark red-coloured Sweet William *Dianthus barbatus*, with double flowers, and a handsome, white *Godetia* named *Duchess of Albany Improved*.

AWARDS OF MERIT.

Campanula persicifolia var. *Wm. Lawrence*.—A variety with blue flowers that expand more widely than those of the type. Shown by Mr. W. LAWRENCE, Eggescliffe.

Delphinium Mrs. G. Ferguson.—An excellent double-flowered variety with perfectly cream-coloured flowers. Shown by Mr. G. FERGUSON, Weybridge.

Rose Hugo Roller.—A beautiful and fragrant Tea Rose, the outer petals of which are red, almost crimson, and the inner petals cream-coloured. Shown by Messrs. W. PAUL & SON.

Spiræa camtschatica rosea.—A plant was shown by Mr. AMOS PERRY with fine rose-coloured inflorescences under the name of *S. venusta* "Beauty," but the committee considered it to be a form of *S. camtschatica* (*gigantea*) *rosea*. Mr. Perry stated subsequently, however, that he had raised the plants from seeds of *S. venusta*, and though the differences between the two species do not appear very great, the plant shown appeared to us most like *S. venusta*, which is synonymous with *S. lobata*. It is less gross in growth than *S. camtschatica*.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, De B. Crawshaw, W. Bolton, W. A. Binley, H. Little, W. Boxall, G. F. Moore, R. G. Thwaites, A. A. McBean, H. T. Pitt, A. Dye, W. Cobb, W. H. Young, H. G. Alexander, H. A. Tracy, F. J. Hanbury, and J. Wilson Potter.

Major G. L. HOLFORD, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. H. G. Alexander), was awarded the society's Gold Medal for a magnificent group, each plant in which exhibited the highest degree of culture. Included were many choice hybrid varieties that have been raised at Westonbirt, and among these *Cattleya Hardyana* far surpassed in quality, the imported natural hybrid forms. At one end of the group was a noble specimen of *Cattleya Warszewiczii*, with 26 well-developed flowers, grown from a single imported plant; above it was a plant of *Miltonia vexillaria*, with 45 flowers, and another specimen of this species in the group had even a greater number. Plants of the Westonbirt form of *Cattleya* Lord Rothschild were also shown well, the large rose and crimson flowers having the greater part of their lips of a rich orange colour. This is said to last longer in bloom than almost any other *Cattleya*. *Lælio-Cattleya callistoglossa* Earl Grey had very fine rosy-lilac flowers, with the large and showy labellums entirely of a rich claret colour. At the back of the group, which was well arranged in a setting of green moss and *Adiantum* Ferns, were a number of light inflorescences of the spotted-lipped form of *Oncidium sarcodes*; also *O. pratense*, *O. Gardnerianum*, the white *Phalæopsis amabilis*, and *Odontoglossum Pescatorei*, with a branched spike of 63 flowers. In the front portion of the exhibit was a noble specimen of the large, white *Miltonia vexillaria* Queen Alexandra, with six flower spikes, bearing altogether 33 flowers, and a pan containing the charming reddish-crimson-coloured *Sonchro-Lælia læta* Orpetiana, with five flowers. Other

interesting Orchids noted were *Lælio-Cattleya* Clive, Westonbirt variety, a very large and beautiful flower; the new *Lælio-Cattleya* Caligula (C. Warszewiczii × L.-C. callistoglossum); *Brasso-Lælia* Helen, and some other *Brassavola* Digbyana hybrids; specially good *Lælio-Cattleya* callistoglossa, and further hybrids raised at Westonbirt, and included two fine novelties. (See Awards.)

Messrs. CHARLESWORTH & Co., Heaton, Bradford, were awarded a Silver Flora Medal for an interesting and varied group, which contained a good selection of uncommon species, including the singularly-formed *Bulbophyllum* Lobbii colossus; *Cynoches* Egertonianum, with a long raceme of curious flowers; *Oncidium* Waluewa, a graceful species with drooping sprays of pretty, cream-coloured flowers that have bars of a rose colour; *Odontoglossum* blandum, *Trichopilia* Turialva, *Oncidium* stramineum, *Stelis* tristyla, and other singular species. Among the showier flowering plants were *Odontoglossum* Pescatorei Golden Gem, with clear, canary-yellow flowers that have a darker yellow crest, which showed little departure from that of a typical flower of *O. Pescatorei*. Among the hybrids were the new and pretty *Lælio-Cattleya* Elba (L.-C. Ingramii × C. Warszewiczii), a very neat flower, with ruby-purple lip, and having the orange-coloured disc extended into two clear blotches, one on each side, as in C. Warszewiczii; L.-C. Mollie, with buff-tinted sepals and petals and ruby-claret lip, with an orange-coloured disc; *Odontoglossum* Rolfeae, &c.

Messrs. CRIPPS & SON, Tunbridge Wells Nurseries, Kent, were voted a Silver Flora Medal for a small but bright group of the brilliant scarlet *Disa grandiflora*, which they cultivate apparently with ease, although many expert gardeners fail to grow it satisfactorily. The plants were well furnished with flower-spikes, and in the aggregate there were some 70 or 80 flowers.

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Banksian Medal for a group in which the principal novelty was the new hybrid *Odontoglossum* Memoria Lambeauizae, the result of crossing a remarkable plant which they exhibited at the Ghent Quinquennial show as *O. Prince Albert*, but which some considered to be a distinct and nearly black-sepalled form of *Odontoglossum* sceptrum, crossed with *O. Harryanum*. The new hybrid flowered for the first time from a small pseudo-bulb, and bore a spike of two flowers of great promise, and an advance in dark-coloured hybrid *Odontoglossums*. The flower in size and shape partakes much of *O. Harryanum*. The sepals are of a blackish-chocolate colour, with a slight whitish tip and base, and crossed with two thin, whitish, wavy lines. The petals are cream-white at the base, spotted with dark chocolate, the margin and outer half being blackish chocolate similar to the petals. The lip is broad, coloured pale primrose in front, spotted with purple at the base and around the dark yellow crest. Examples of uncommon and pretty species in the group were two good groups of *Aeropera* Loddigesii, several *Masdevallias*, the new white form of *Phaius maculatus*, several *Ancistrochilus* Thompsonianus, *Trigonidium* Amesianum, *Galeandra lacustris*, *Epidendrum rigidum*, *Eria acervata*, *Trichopilia marginata*, *Aerides expansum*, &c.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, gained a Silver Banksian Medal for a group composed of *Brasso-Cattleya* Digbyano-Warszewiczii, with very fine rose-coloured flowers with fringed lips; *Lælio-Cattleya* Vesta, with bronzy petals and purple lips; *Disa* Luna, a pretty hybrid, with rose-purple flowers; *Masdevallia* Imogen, and other *Masdevallias*; two plants of the showy yellow and rose-coloured *Sobralia Veitchii*; the scarlet *Cochlidia* Noezliana; *Cypripedium* Wiertzianum; *Oncidium leucochilum*, &c.

R. I. MEASURES, Esq., Camberwell (gr. Mr. Smith), received a Silver Banksian Medal for a group in which were *Maxillaria ochroleuca* (with many cream-white flowers), two specimens of *Cölogyne speciosa*, C. Massangeana, *Miltonia* vexillaria albens, *Lælio-Cattleya* Clive, *Cypripedium* Curtisii, Cambridge Lodge variety, several *Masdevallias*, and a pan of *Dossinia marmorata*. (See Awards.)

Messrs. HUGH LOW & Co., Enfield, showed *Cattleya* Gaskelliana alba, with four flowers; C. Gaskelliana Phyllis, with pale-rose flowers; and two good forms of *Odontoglossum* Pescatorei.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), showed an inflorescence of the rare *Cattleya Warszewiczii* saturata of fine colour, and in which the usual blotches of yellow on the lip are suppressed, the lip being wholly dark crimson-purple; also *Lælio-Cattleya* Henry Greenwood, Glebelands variety, a pretty light-coloured form.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), showed *Lælio-Cattleya* Clonia gigantea (L.-C. elegans Turneri × C. Warszewiczii), a brilliantly-coloured flower, with rose-coloured sepals, having the bronzy tint of L.-C. elegans, and broad, rose petals veined with rose-purple; the expanding, crimped front lobe of the lip and the tips of the side lobes are of a bright magenta-purple tint. The spikes bore three large flowers.

H. T. PITT, Esq., Rosslyn, Stamford Hill, exhibited the singular little *Oncidium pumilum* and *Dendrobium ciliatum annamense*, both well flowered.

F. W. MOORE, Esq., Royal Botanic Gardens, Glasnevin, Dublin, sent an inflorescence of the rare *Luëddemannia* Pescatorei, with wax-like, orange-coloured flowers and sepals of a coppery tint. A plant of this species, with an inflorescence 4 feet in length, was exhibited by Miss Willmott, June 12, 1906, and it was then awarded a Botanical Certificate.

AWARDS.

AWARDS OF MERIT.

Cattleya Waldemar (Whitei × *Dowiana aurea*), from Major G. L. HOLFORD, C.I.E., C.V.O. (gr. Mr. H. G. Alexander).—A very pretty and distinct hybrid, with sepals and petals of a cream colour; tinged and flaked with rose; the broad, crimped labellum is blush-white and closely veined and marbled with varying shades of purple. The base is marked with clear, gold lines.

Cattleya Macanas var. *Thor* (superba × *Warszewiczii*).—In this charming hybrid the beauties of both parents are admirably blended. The sepals and petals are blush-rose colour; the front of the showy labellum is ruby-purple, the throat and disc white, with an orange band. The plant exhibited bore an inflorescence of six flowers.

Miltonia vexillaria, *Lambeau's* variety, from Monsieur LAMBEAU, Brussels.—The best and largest of the coloured forms, and of fine shape. The sepals and petals are coloured bright rose, with a white margin. Lip 4 inches across, bright purplish-rose, with darker veining, the base being white, with several red lines. The plant bore a well-developed spike.

Dossinia marmorata, from R. I. MEASURES, Esq., Camberwell (gr. Mr. Smith).—A species with large, velvety, green leaves that have bronze and gold-coloured veining. It is usually known in gardens as *Anætochilus* Lowii.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., and Messrs. W. Bates, Ed. Beckett, A. Dean, H. Parr, A. R. Allan, J. Davis, Geo. Kelf, Chas. Foster, Jno. Lyne, C. G. A. Nix, Geo. Reynolds, J. Jaques, H. Somers Rivers, P. C. M. Veitch, Owen Thomas, W. Poupart, and Jas. Vert.

Messrs. SUTTON & SONS, Reading, filled one side of a long table with an exhibit of culinary Peas, gathered from trial rows in their experimental grounds at Reading. The collection embraced over 50 varieties and about 20 seedlings, the latter being shown under numbers in a large glass case. The exhibit was noteworthy for the remarkable quality of the pods, each dish was shown in the best exhibition style, and the varieties were representative of the best in the various sections—early, late, dwarf, tall, &c. Of course, the display furnished no evidence of the cropping qualities of the individual varieties, nor their freedom from disease, &c., but, as seen, the finest were Early Giant, one of the best of the early-season kinds; Green Gem, Prizewinner (when opened the pods were found to contain 11 very large Peas); King Edward (the pods being full to almost overflowing; Little Marvel, and Harbinger, two good dwarf kinds; Selected Gladstone, Superlative (remarkably handsome pods of a deep-green colour); and World's Record. The manner of staging was pleasing, a dark velvet cloth being used as a

groundwork, with foils of palms and vases of flowers. The collection of seedlings contained many varieties of great promise. (Silver-Gilt Knightian Medal.)

Messrs. JAMES CARTER & Co., High Holborn, London, also showed an exhibit of Peas, in all some 250 varieties. This very large collection was from their trial ground at Mortlake, and as all were sown on the same date (March 27), it was of much educational value as demonstrating the season of each kind; some were yellow in the pod, and others were just forming their seeds. Attached to each dish was a label affording information as to the season, habit, &c., of the variety displayed. The manner of staging was effective, for interspersed in the group were vases of Sweet Peas, and arches filled with the same flowers were arranged down the centre of the table. The large pods of Quite Content were conspicuous, and quite the largest in this extensive display. Other varieties that were especially noticeable in this display were Duke of Albany, Duchess of York, Stratagem, Carter's Exhibition, Alderman, Gladstone, Dreadnought, New Model, Daisy, and Torpedo. Several seedlings of merit were also shown, and selected stocks of standard kinds. (Silver-Gilt Knightian Medal.)

Two further exhibits of Peas were shown by Messrs. G. W. KING & Co., Coggeshall, Essex, who showed 80 distinct varieties, all of which were sown on March 22 of this year, and Mr. WILLIAM DEAL, Brooklands, Kelvedon, Essex. Messrs. KING showed Quite Content, Alderman, Centenary, Gradus, Superlative, Glory of Devon, Stratagem, Prize-Winner, Abundance, &c. They also exhibited haulms of some varieties in fruit, amongst which was a new variety named The Jap, carrying a very large number of fine pods. (Silver Banksian Medal.) Mr. DEAL displayed Duke of Albany, Telephone, Sutton's Al, Essex Star, Masterpiece, and many other varieties of proved worth. (Silver Banksian Medal.)

Messrs. T. RIVERS & SON, Sawbridgeworth, showed a collection of Cherries from pot-grown trees. Of black kinds they had May Duke, Géante d'Heidelberg, Turkey Black Heart, Bigarreau Noir de Guben, Early Rivers (deep black), Bigarreau Noir de Schmidt (the largest fruits in the collection), Late Black Bigarreau, Black Tartarian, and of white kinds White Bigarreau, Emperor Francis, Guigne Choque, and Reine Hortense. The whole of the fruits were of exceptional quality. (Silver-Gilt Knightian Medal.)

Messrs. LAXTON BROS., Bedford, displayed boxes of Strawberries of the varieties Reliance and Progress. Both are late-season fruits, the former is a very fine-flavoured variety raised by crossing Vicomtesse H. de Thury with a seedling of the St. Joseph, or perpetual fruiting type. The flesh is firm and of splendid eating qualities. Messrs. LAXTON also showed a new Raspberry named Prosperity, and fruits of a Japanese Plum.

A large, yellow-fruited Tomato named Home-wood Favourite was shown. It much resembles the variety Golden Jubilee.

Mr. G. GODDARD, Norwood Green, Southall, showed young plants of Black Currant labelled Monarch. The small bushes were heavily fruited.

Mr. S. ATTRELL, North Common, Chailey, Sussex, exhibited canes of a new variety of Raspberry named Attrell's Magnum, that were carrying big clusters of large fruits.

AWARD OF MERIT.

Strawberry Fillebasket.—This variety was awarded this distinction after trial at Wisley. It is not new, and fruits were exhibited by the raisers, Messrs. LAXTON BROS., Bedford, at York Gala in 1900. We were unable to find any of the fruits after the committee had risen. The following is abridged from the raisers' description:—"Raised from 'Royal Sovereign' and 'Latest of All.' The colour is bright scarlet, similar to Royal Sovereign; the flesh is white and firm, with no hollowness in the centre; in size of fruit it is between its two parents; external skin glossy scarlet, and seeds set in shallow basins, making it a good traveller, of rich flavour. The cropping qualities are remarkable. The habit of the plant is compact and robust, leaves thick and leathery, resisting mildew."

NATIONAL CARNATION AND PICOTEE.

JULY 24.—This society held its annual exhibition on the above date at the Royal Horticultural Hall, Vincent Square, Westminster. The quality of the blooms was generally excellent, and the colours distinct and clear, a "run" flower being rare.

DRESSED FLOWERS.

In the class for 18 blooms, on cards, bizarres and flakes, the 1st prize was won by MARTIN R. SMITH, Esq., Hayes (gr. Mr. C. Blick). The varieties consisted of Consuelo, Norseman, Fra Diavolo, Zoedone, Gaylad, Mine Host, Isolde, Amyas Leigh, Algot, Phaeton, Emigrant, Carissima, Abbess, Shamrock, Silver Queen, Lord Macaulay, and Merry Lass. There were several weak and disfigured blooms in the 1st prize exhibit, but all were fairly large; 2nd, Mr. R. G. RUDD, Kings Norton, who had fine blooms of Master Fred, Guardsman, W. Shirving, Mrs. T. Lord, Gordon Lewis, Chas. Henwood, and Merton; 3rd, Mr. C. TURNER, Royal Nurseries, Slough, with good blooms of Chas. Henwood, Mrs. T. Lord, G. Herbert, G. Nesbit, &c.

Eighteen blooms of Self-coloured Carnations.—MARTIN R. SMITH, Esq., was again 1st, and this time easily, with very superior blooms of the following varieties, viz., Daffodil, Ashantee, Snowdrift, Sir Galahad, John Pope, Much the Miller, Lady Linlithgow, W. H. Parton, Bonnie Dundee, Fleur de Lis, Vesta, and Imogene; 2nd, Mr. R. G. RUDD, with Daffodil, Chancellor, Mrs. Eric Hambro, Mrs. R. C. Cartwright, Bridegroom, Benbow, and Captivation; 3rd, Mr. C. TURNER.

Fancy Varieties.—In the class for 18 Fancy flowers, in not fewer than 12 varieties, the 1st prize was won by MARTIN R. SMITH, Esq., with a very fine, showy lot of large, clear-coloured blooms. The back row consisted of The Skipper, Linksman, Sam Weller, Miss H. Thompson, and Bonnie Buchanan; Buboshes, Mohawk, and Mandarin were in the middle row; and in the front were Tattycoram, Seneca, and Rayon d'Or; 2nd, Mr. R. G. RUDD, with large blooms, but lacking generally in brilliancy. The finest examples were those labelled Voltaire, Sam Weller, Cavalier, Liberté, Sir Lancelot, John Sebright, and Le Beau; 3rd, Mr. C. TURNER.

White-ground Picotees.—The best 18 varieties were shown by Mr. R. G. RUDD, with perfect blooms that were nearly all of equal size. These were Cato, Miss Evelyn Cartwright, Fanny Tett, Amelia, Little Phil, Mrs. H. Hoskins, Lavinia, Favourite, Brunette, Mrs. Sharp, Mrs. Beswick, and Mrs. Openshaw; 2nd, MARTIN R. SMITH, Esq., whose blooms of Ariadne, Lavinia, Dolores, White Heather, Favourite, Lady Macbeth, and Snowdrop, were most meritorious; 3rd, Mr. C. TURNER.

Yellow-ground Picotees.—In the class for 18 yellow-ground Picotees, in not fewer than 12 varieties, the 1st prize was won by MARTIN R. SMITH, Esq., with an exceptional lot of blooms. We noticed, as especially good, Lady Gascoigne (a light-edged bloom), Sunbeam, Morgan le Fay, John Ruskin, Her Majesty, Ladybird, Ace of Trumps, Mithra, Leonora, Orby, and Mrs. W. Heriot; 2nd, Mr. R. G. RUDD, with Lucy Glitters, Lauzan, Mrs. W. Heriot, Calais, Cymbeline, Carlyle (a fine heavy-edged bloom), Dalkeith, and Cadogan.

UNDRESSED FLOWERS.

Mr. J. DOUGLAS, Great Bookham, won the 1st prize in the class for 12 varieties of Self-coloured Carnations. His flowers included such fine varieties as Apricot (a cerise pink), St. Peto (a rich purple), Trojan (white), Cupid (rose-pink), Daffodil, and Miss Willmott (rosy-scarlet). This last flower was selected as the premier Self flower in the show, the exhibitor being also the raiser; 2nd, Mr. R. G. RUDD, with varieties different to the foregoing. We noted Hermione, W. H. Parton, Mrs. Flight, Camilla (a rich rose-pink), and Capurnia (pinkish-buff colour); Mr. C. TURNER and MARTIN R. SMITH, Esq., were placed equal 3rd in this class.

Fancy Carnations.—The best blooms of undressed Fancies were shown by MARTIN R.

SMITH, Esq., in whose stand a bloom of Pacquin took 1st prize for an undressed Carnation. In the collection we noted grand blooms of Rayon d'Or, Hengist, Merlin, Sam Weller, Charlemagne, Keogh, Merriden, &c.; 2nd, Mr. J. DOUGLAS, among whose blooms the more distinct and novel coloured flowers were Nizam, Buchanan, Galilee, and Tintagel; 3rd, Mr. R. G. RUDD.

Picotees.—These were required to be shown in not fewer than 12 varieties; the 1st prize was won by Mr. MARTIN R. SMITH, with varieties similar to those we had noted in the previous competition, and mostly those which possess wire edges, Her Majesty being the best of the heavy edges; 2nd, Mr. R. G. RUDD, with well-chosen varieties that were rather small.

Twelve distinct varieties, including Selfs, Fancies, and Yellow Grounds.—The schedule required these to be shown in 12 vases, three blooms of each. The winner of the 1st prize was MARTIN R. SMITH, Esq.; 2nd, Mr. J. DOUGLAS; 3rd, Mr. R. G. RUDD. The method of showing the blooms in triplets was pleasing, and the flowers generally were of good quality.

Classes open to exhibitors in either the 1st or 2nd divisions of the schedule.—A class was provided for a stand of six blooms of any Self Carnation and in this the 1st prize was won by H. R. TAYLOR, Esq., Cheam (gr. Mr. J. Gilbert), his variety being Mrs. Eric Hambro; 2nd, MARTIN R. SMITH, Esq., with the same variety; 3rd, Mr. R. G. RUDD, with Sir Galahad.

Six blooms, dressed, of any Yellow or Buff Ground Fancy Carnation.—1st, Mr. R. G. RUDD, with very fine blooms of W. Pemberton.

Six blooms, dressed, of any Carnation other than Yellow or Buff Grounds.—All must be of one variety only. The 1st prize was awarded MARTIN R. SMITH, Esq., for very beautiful blooms of The Nizan; 2nd, Mr. R. G. RUDD, with Nellie.

Six blooms of any Yellow Ground Picotee.—1st, Messrs. PHILLIPS & TAYLOR, with Léonora; 2nd, MARTIN R. SMITH, Esq., with Lady Fremantle; 3rd, H. R. TAYLOR, Esq., with Pilgrim.

There were several exhibits in classes for undressed flowers, but nothing was shown that calls for comment.

Groups of Carnations.—Two groups were shown, and MARTIN R. SMITH, Esq., was placed 1st for a semi-circular group, 10 feet in longest diameter, consisting of only the finer varieties; Mr. H. LAKEMAN, Thornton Heath, Surrey, was 2nd. Mr. SMITH took the 1st prize for a dinner table set out with Picotees. He used a bowl and six small vases to display his flowers, and these occupied much of the table space.

The premier heavy-edged white-ground Picotee John Smith and premier light-edged white-ground Picotee Fortrose were both shown by H. R. TAYLOR, Esq., of Cheam, in his 1st prize exhibit in a class for 12 white ground flowers.

The premier rose-flaked and premier bizarre Carnations were shown by H. R. TAYLOR, Esq., in Merton and Robert Lord respectively.

Many of the exhibits from the previous day's exhibition remained in the Hall, and added greatly to the display as a whole.

SOUTHEND-ON-SEA HORTICULTURAL.

JULY 10.—The annual exhibition of this society was held on the foregoing date in the Palace Hotel, Southend-on-Sea. The show proved to be highly satisfactory as regards the quality and number of the exhibits, but, unfortunately, rain fell during the afternoon, and this affected the attendance of visitors.

Roses formed the most attractive feature of the exhibition, and these were arranged—as also were Sweet Peas—in one of the large ballrooms. The Winter Garden was rendered beautiful by groups of miscellaneous plants.

Roses.—In the class for 48 blooms of distinct varieties, Messrs. D. PRIOR & SON, Colchester, won the 1st prize with a grand display of large, well-shaped blooms, and they were followed by Messrs. F. CANT & CO., Colchester. The 1st prize stand included extra fine blooms of the varieties Caroline Testout, Captain Hayward, A. K. Williams, Marie Verdier, Gladys Hark-

ness, Bessie Brown, Magna Charta, Frau Karl Druschki, Countess of Caledon, Souvenir de Pierre Notting, and Duke of Edinburgh. The most prominent blooms in Messrs. F. CANT & CO.'s stand were those of Aimée Cochet (very fine) and Niphetos.

In the class for 18 Tea or Noisette blooms the positions of these two firms were reversed on the prize-list.

In the class for 12 distinct varieties, Messrs. PRIOR & SON beat Messrs. F. CANT & CO. Both these growers staged fine blooms.

Messrs. PRIOR & SON also had the best 12 blooms of one variety, in grand blooms of the variety Liberty. 2nd, Messrs. F. CANT & CO., with magnificent blooms of Frau Karl Druschki. Five exhibits were staged in this class, including a stand of good blooms of Mme. Wagram, shown by the Rev. F. R. BURNSIDE, Stambidge Rectory, Rochford.

AMATEUR CLASSES.

In the class for 36 distinct varieties of Roses, the Rev. J. H. PEMBERTON, Havering-Atte-Bower, was the only exhibitor. His flowers were of excellent quality, and included J. B. Clark, Lady Ashtown, Alice Lindsell, Mildred Grant, M. Hoste (a fine yellow), Ulrich Brunner, white Maman Cochet, and Frau Karl Druschki. This last-named bloom was awarded the National Rose Society's Silver Medal as being the best Hybrid Perpetual Rose in the show.

The Rev. J. H. PEMBERTON was again to the front in the class for nine distinct varieties of Roses, three blooms of each variety, with a meritorious array of blooms, including the varieties Frau Karl Druschki, Mrs. W. J. Grant, Caroline Testout, Mildred Grant, &c. 2nd, Mr. WAKELEY, whose example of White Maman Cochet was awarded the N.R. Society's Silver Medal offered for the best Hybrid Tea Rose in the show.

Mr. H. ROBINS had the best 18 blooms of Roses in distinct varieties; and the Rev. F. R. BURNSIDE was 1st for 12 distinct varieties, and for eight blooms of Teas or Noisettes in distinct varieties.

The classes provided for local growers were well contested, and the blooms staged were meritorious. The same remark applies to the ladies' classes for floral decorations.

Mr. W. G. HATCH, nurseryman and florist, Prittlewell, Southend-on-Sea, was awarded a Gold Medal for an effectively arranged group of miscellaneous plants. Mr. A. DAVEY, Leigh Nursery, Leigh-on-Sea, was granted a Silver-Gilt Medal for a similar but less effective arrangement.

A Silver Medal was awarded Mr. M. LONGMAN for a display of plants, &c.

Dr. G. F. JONES, J.P., Westcliff-on-Sea, was granted a Certificate of Merit for a collection of Cacti.

RAYLEIGH AND DISTRICT HORTICULTURAL.

JULY 17.—The seventh annual exhibition of the above society was held on this date under most favourable weather conditions. The attendance of visitors was satisfactory, and the show taken altogether was the best held by the society. The most successful exhibitors in the open classes and the classes confined to gentlemen's gardeners residing within 10 miles of Rayleigh, were Mr. A. Epps (gr. to Mrs. MILLER, Leigh-on-Sea), who won seven first and three second prizes; Mr. S. TAYLOR, Rayleigh; Mr. E. JACKSON, Rochford; and Mr. J. POLLY (gr. to A. CHAPMAN, Esq., Fairview, Rayleigh). The most successful exhibitors in the amateur classes were Mr. W. J. VICKERS (hon. sec.), who secured seven prizes, including four firsts, and Mr. W. A. VOSS with five firsts and four second prizes. In the ladies' classes, Mrs. DEVENISH was accorded first prize for a decorated dinner table. Mrs. TAYLOR had the best arranged wicker basket of cut flowers, as well as the most effectively composed bouquet and lady's spray.

In the class for a group of miscellaneous plants arranged for effect, Mr. DAVEY, Leigh-on-Sea, was awarded the 1st prize, and Mr. A. EPPS the 2nd prize. Mr. HAROLD H. BROWN, Clements Hall, Hawkwell, staged three stands of Roses, not for competition, but they were the best Roses in the show.

MARKETS.

COVENT GARDEN, July 24.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding, the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—ED.]

Cut Flowers, &c.: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Alstromerias, per dozen bunches ... 2 0-4 0	Mignonette, per doz. bunches ... 3 0-4 0
Bouvardia, per doz. bunches ... 2 0-3 0	Myosotis, per doz. bunches ... 1 6-2 0
Calla aethiopica, p. dozen ... 2 0-3 0	Odonoglossum crispum, per dozen blooms ... 2 0-2 6
Carnations, per dozen blooms, best American various ... 1 6-3 0	Paonies, per doz. bunches ... 4 0-3 0
— smaller, per doz. bunches ... 9 0-12 0	Pancreaticus, per dozen fls. ... 3 0-4 0
— Malmaisons, p. dozen blooms ... 6 0-10 0	Pelargoniums, show, per doz. bunches ... 4 0-6 0
Cattleyas, per doz. blooms ... 10 0-12 0	— Zonal, double scarlet ... 4 0-6 0
Coreopsis, per doz. bunches ... 2 0-3 0	Pinks ... 1 0-3 0
Cornflower, per doz. bunches ... 2 0-3 0	Poppies, Iceland, doz. bunches ... 4 0-8 0
Eucharis grandiflora, per doz. blooms ... 2 0-3 0	— Oriental ... 4 0-8 0
Gaillardias, per doz. bunches ... 2 0-3 0	— Shirley ... 2 0-3 0
Gardenias, per doz. blooms ... 2 0-3 0	Pyrethrum, per dozen bunches ... 2 0-4 0
Glaucolus, The Bride, per doz. bunches ... 3 0-5 0	Ranunculus, per dozen bunches ... 4 0-6 0
— Branchensis ... 1 0-8 0	Rhodanthe, per doz. bunches ... 3 0-4 0
— various ... 4 0-9 0	Roses, 12 blooms, Niphetos ... 1 0-3 0
Gypsophila elegans p. doz. bunches ... 2 0-3 0	— Bridesmaid ... 2 0-3 0
Iris, German, per doz. bunches ... 4 0-6 0	— C. Testout ... 2 0-3 0
— Spanish, p. doz. bunches ... 4 0-9 0	— General Jacqueminet ... 0 6-1 0
Lapageria alba, per dozen ... 1 0-1 6	— Marcha Nigra ... 1 6-3 0
Lilium auratum ... 2 0-3 0	— Victoria ... 1 6-3 0
— candidum, bch. ... 1 0-2 0	— Mrs. J. Lang ... 1 0-3 0
— lancifolium, rubrum and album ... 1 6-2 0	— C. Mermel ... 1 0-3 0
— longiflorum ... 2 0-3 0	— Liberty ... 2 0-4 0
Lily of the Valley, p. doz. bunches ... 6 0-9 0	— Mad Chateaux ... 1 0-3 0
— extra quality ... 10 0-15 0	Statice, per dozen bunches ... 3 0-4 0
Marguerites, white, p. doz. bunches ... 2 0-3 0	Stephanotis, per dozen bunches ... 3 0-5 0
— yellow, per doz. bunches ... 1 6-2 0	Stocks, per dozen bunches ... 3 0-4 0
	Sweet Peas, p. doz. bunches ... 1 0-3 0
	Sweet Sultan, per dozen bunches ... 3 0-4 0
	Tuberose, per doz. blooms ... 0 4-0 6

Cut Foliage, &c.: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Adiantum cuneatum, per dozen bunches ... 4 0-6 0	Galax leaves, per dozen bunches ... 2 0-2 6
Asparagus plumosus, long trails, per doz. bunches ... 8 0-12 0	Hardy foliage (various), per dozen bunches ... 2 0-6 0
— medium ... 1 6-2 0	Ivy-leaves, bronze, per doz. bunches ... 2 0-2 6
— Sprengeri ... 0 6-1 0	— long trails per bunch ... 1 6-3 0
Berberis, per doz. bunches ... 2 0-2 6	— short green, doz. bunches ... 2 0-3 0
Croton leaves, bch. ... 1 0-1 6	Moss, per gross ... 4 0-5 0
Cycas leaves, each ... 1 6-2 0	Myrtle (English), small-leaved, doz. bunches ... 1 0-6 0
Fern, English, per dozen bunches ... 1 0-2 0	— French, dozen bunches ... 1 0-1 6
— French, dozen bunches ... 1 0-3 0	Smilax, p. doz. trails ... 1 6-2 6

Plants in Pots, &c.: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Ampelopsis Veitchii, per dozen ... 6 0-8 0	Euonymus, per doz. ... 4 0-9 0
Araucaria excelsa, per dozen ... 12 0-30 0	Ferns, in tins, per 100 ... 7 0-10 0
Aspidistras, green, per dozen ... 18 0-30 0	— in small and large 60's ... 16 0-25 0
— variegated, doz. ... 30 0-42 0	— in 32's, per doz. ... 10 0-18 0
Asparagus plumosus nanus, doz. ... 9 0-12 0	Ficus elastica, doz. ... 8 0-10 0
— Spathulifolius, doz. ... 9 0-12 0	Fuchsias, per doz. ... 4 0-8 0
— tenuissimus, per dozen ... 9 0-12 0	Heliotropiums, per dozen ... 3 0-4 0
Boronia megastigma, per doz. ... 12 0-30 0	Hydrangea Thos. ... 12 0-18 0
— heterophylla ... 12 0-24 0	— Hortensia, per dozen ... 8 0-12 0
Calceolarias, yellow ... 2 0-4 0	— paniculata, per dozen ... 12 0-30 0
Campanulas, p. doz. ... 6 0-9 0	Kentia Belmoreana, per dozen ... 12 0-18 0
Clematis, per doz. ... 8 0-9 0	— Fosteriana, p. dozen ... 12 0-21 0
— in flower ... 12 0-18 0	Kochia scoparia, per dozen ... 6 0-9 0
Cocos Weddelliana, per dozen ... 9 0-18 0	Latania borbonica, per dozen ... 12 0-18 0
Coleus, per dozen ... 2 0-4 0	Lilium longiflorum, per doz. ... 12 0-24 0
Coreopsis, per doz. ... 6 0-10 0	— lancifolium, per dozen ... 12 0-18 0
Crassulas (Kalanchoes), per doz. ... 9 0-12 0	Lily of the Valley, per dozen ... 10 0-12 0
Crotons, per dozen ... 12 0-30 0	
Cyperus alternifolius, dozen ... 4 0-5 0	
— laxus, per doz. ... 4 0-5 0	
Dracenas, per doz. ... 9 0-24 0	

Plants in Pots, &c.: Average Wholesale Prices (Contd.)

s.d. s.d.	s.d. s.d.
Lobelia, per dozen ... 5 0-6 0	Pelargoniums, show, per doz. ... 6 0-9 0
Marguerites, white, per dozen ... 4 0-8 0	Petunias, double, per dozen ... 4 0-8 0
— yellow ... 12 0-18 0	— single, per doz. ... 3 0-6 0
Mignonette, per doz. ... 6 0-9 0	Rhodanthe, per doz. ... 4 0-6 0
Musk, per dozen ... 4 0-5 0	Roses, H.P.s, doz. ... 12 0-24 0
Pearls, various, p. doz. ... 4 0-5 0	— Rambles, each ... 5 0-21 0
— Ivy, each ... 4 0-6 0	Solanella, dozen ... 4 0-6 0
Mde. Crousse and Galilee, p. dozen ... 4 0-6 0	Spatulifolius, doz. ... 5 0-8 0
— Zonals, per doz. ... 4 0-6 0	Verbena, Miss Willmot, doz. ... 6 0-9 0

Fruit: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Apples, per box, Tasmanian ... 8 6-9 0	Grapes, Belgian Hambro's, per lb. ... 0 6-0 9
— Lord of the Isles ... 6 6-7 6	— Lemons: ... 10 0-11 0
— Seaford ... 6 6-7 6	— Navel, case ... 18 0-23 0
— Sturmer Nonpareils ... 7 0-8 0	— Navel, per box ... 1 0-1 0
— plus ... 6 0-7 0	— Lyonesse, per box ... 1 0-1 0
— French Crabbs ... 6 0-7 0	Mangoes, per doz. ... 6 0-12 0
— Prince Alfreds ... 6 6-7 6	— Menon, Guernsey, each ... 0 9-2 6
— Austrians ... 7 0-7 6	— French, Rock, each ... 2 0-2 6
— Australian, box: ... 7 0-9 0	— Valencia, per case ... 7 0-10 0
— Monro's Favorite, per box ... 7 0-9 0	— Canteloupe, each ... 0 3-0 4
— Roman Beauty ... 7 0-8 0	Nectarines (English), per doz. ... 2 0-9 0
— Cleopatra ... 7 0-9 0	— French, p. box ... 1 3-1 6
— Jonathan ... 10 0-11 0	Nuts, Cobnuts, per doz. lb. ... 2 6-3 0
— New York Pippins ... 7 0-9 0	— Almonds, bags 54 ... 0 —
— Five Crowns ... 6 6-7 0	— Brazils, new, per cwt. ... 40 0-42 6
— Rymer ... 6 0-7 0	— Barcelona, bag 36 ... 0 —
Apricots (French), per box ... 1 2-1 4	— Cocanuts, 100 ... 12 0-17 0
— French, cases ... 2 6-3 6	Oranges, per case: ... 18 0-30 0
— French, sieve ... 5 0-6 6	— Valencia ... 18 0-30 0
Bananas, bunch: ... 5 0 —	— Navel ... 10 0-10 6
— No. 1 ... 5 6-6 0	— Murcia, box ... 10 0-14 0
— Extra ... 6 6-7 6	Peaches (English), per dozen ... 1 0-9 0
— Grapes ... 8 0 —	— 1st ... 6 0-8 0
— Jamaica ... 5 0-5 6	— 2nds ... 1 0-3 0
— Loose, per doz. ... 0 9-1 3	— French, p. box ... 1 0-1 6
Cherries (English), sieve ... 3 6-9 0	Pears (Austrian), per bunch of 3 ... 10 0-20 0
— sieve ... 2 0-5 0	Plums (French), p. box ... 0 10-1 0
— sieve ... 8 0-8 6	— French, sieve ... 4 0-5 6
Currents (English), per box ... 2 6-3 6	— Italian, basket ... 2 0-2 3
— Black ... 4 6-5 0	Gages (French), per box ... 1 3-1 6
— White, p. peck ... 2 9-3 0	— Italian, basket ... 1 6-1 9
Dates (Tunis), doz. bunches ... 2 6 —	— French, sieve ... 6 0-9 0
Figs (Guernsey), p. dozen ... 1 0-4 0	Pineapples, each ... 2 0-3 6
Gooseberries (English), sieve ... 1 6-4 0	Raspberries (English), handle ... 1 3-1 6
Grapefruit, case ... 11 6-13 0	— basket ... 1 3-1 6
Grapes (English), Hambro's, p. lb. ... 0 6-1 0	— English, p. doz. ... 2 6-4 0
— Alicante, per lb. ... 0 8-1 0	Strawberries (English), per peck ... 1 9-3 0
— Gros Maroc, per lb. ... 0 9-1 3	— per lb. ... 0 3-0 9
— English Muscats, per lb. ... 0 9-2 6	

Vegetables: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Artichokes (French), per dozen ... 2 0-2 6	Mushrooms (household), per lb. ... 0 4-0 10
Aubergines (French), per doz. ... 2 0 —	— buttons, per lb. ... 0 10 —
— Beans (French), per doz. ... 5 0-8 0	— Broccoli, per lb. ... 0 5-0 6
— Broad (English), p. bushel ... 3 0 —	Mustard and Cress, per dozen pun. ... 1 0-1 6
— Broad, per lb. ... 0 6 —	Onions (Lisbon), case ... 6 0-7 0
— French, packet ... 0 3-0 4	— picking, per bushel ... 2 0-2 6
— Broad, packet ... 0 6 —	— Spring, per doz. bunches ... 1 6-2 0
Beetroot, bushel ... 1 3-1 6	— Puy, per bag ... 8 0-8 6
Cabbages, per doz. ... 0 9-1 0	Pears (Lisbon), per bushel ... 1 6-2 6
Cabbage greens, bag ... 1 0-1 6	— English, p. bag ... 3 0-5 0
— red, per dozen ... 2 0 —	Patatoes, 120 bunches ... 1 6-2 0
Carrots (French), dozen bunches ... 1 0-1 6	— 1st ... 1 0-1 6
Cauliflowers, p. doz. ... 2 0-2 6	Potatoes (Canary), per cwt. ... 8 0-9 0
Choy choy, doz. ... 3 0 —	Radishes (Guernsey), per dozen ... 0 4-0 6
Cucumbers, per dozen ... 1 6-2 6	Salsify, p. doz. bds. ... 3 6 —
Endive, per dozen ... 1 3-1 6	Spinnage, French, per bushel ... 0 9-1 0
Horseradish, foreign, doz. bds. ... 13 0-14 0	Tomatoes: ... 3 0-3 3
Leeks, 12 bunches ... 1 6 —	— selected, per dozen lbs. ... 3 0-3 3
Lettuce (English), Cos, per score ... 0 4-0 6	— small selected, per dozen lbs. ... 2 6-2 9
Marrows (English), per dozen ... 3 0-6 0	Turnips (English), doz. bunches ... 2 0-3 0
Mint, doz. bunches ... 0 9-1 0	Watercress, per doz. bunches ... 0 4-0 6

REMARKS.—Cherries are now arriving from Kent in large quantities, but these fruits have been considerably damaged by the recent storms. A consignment of Trinidad or claret-coloured Bananas was received by Mr. H. Rides, of the Central Avenue, during the past week; they were of fine quality and in good condition. English Peaches are plentiful and their prices are very low. Home-grown Tomatoes are also cheaper. Strawberries can still be obtained, but the consignments are small. P. L., Covent Garden Market, July 24, 1907.

POTATOS.

Kents, 4s. 6d. to 6s.; Bedford's, 4s. to 5s.; Lincolns, 4s. to 5s.; Blacklands, 3s. 9d. to 4s. 3d. The rain which fell on Sunday and Monday has caused the consignments to be small. The demand for tubers is good, but prices have a slight downward tendency. J. D. C., Covent Garden, July 24, 1907.

COVENT GARDEN FLOWER MARKET.

The supplementary stands in the Jubilee market are now removed, and there are many empty stands in the new portion of the ordinary Flower market, yet some growers still have large supplies of useful plants. Fuchsias are still very good and supplies are likely to continue. Crassula coccinea has been very fine this season, the plants being dwarf and well flowered. The hybrid varieties which come into flower earlier than the species are now almost finished for the season. Dorothy Perkins and Lady Gay Roses are held by some to be almost identical, but the latter variety, seen at its best, is of the more deeper and more pleasing shade of colour. A few fairly good plants of Rose Hia-watha have been seen. Plants that are not quickly sold drop their petals, but the Flower market is one of the worst places for retaining flowering plants in a good condition, and the cause may not altogether be due to the variety, Zonal, show and Ivy-leaved Pelargoniums are still plentiful; also Marguerites in both white and yellow-flowered varieties. Other plants seen include Coreopsis, Chrysanthemum segetum, Verbena Miss Willmot, and Mignonette. Lobelia appears to be finished for the season, except the double-flowering variety, which is now better than ever.

CUT FLOWERS.

Hardy flowers are now a great feature; these include Poppies, Alstromerias, Coreopsis, Corn flowers (Centaurea cyanus) in several shades of colours, Altheas in white and crimson, and pink and white Saponaria. Asters are already arriving, chiefly from France. Sweet Peas are much overdone, and very many are left unsold. Roses vary, those of best quality sell fairly well. The blooms from the open show traces of damage caused by the bad weather. Carnations are still abundant. The yellow-flowered Sweet Sultan is good, except those flowers which have been cut when in a wet condition. All flowers of this class travel much better if the flowers are quite dry when cut and packed. Sprayers have come largely into use and many persons use them too freely on their flowers for transit. Liliums are not too plentiful. Lily of the Valley is still sufficiently abundant to meet all demands. Stale flowers deteriorate very quickly in vases, &c., and the buyers are then disappointed, and do not purchase cut flowers again unless on some special occasion. — A. H., Covent Garden, Wednesday, July 24, 1907.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending July 20, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The weather was very fine, especially in the western districts where the amount of bright sunshine was much greater than in the east, and the air was consequently warmer. Thunder and lightning occurred in several parts of Ireland on Thursday, Friday and Saturday; on the last mentioned day it extended as far as Wales and the West of England. Lightning was seen at Ipswich on the evenings of the 15th and 18th.

The temperature was above the average generally, the excess amounting to 7° in Ireland N.W. and to nearly 8° in Scotland W. In Eng. and N.E., however, the excess was only 0·5°, while in England S. there was a deficit of 0·1°, and in England E. of 1·3°. The highest readings were mostly registered on Tuesday in Scotland, and later at the majority of stations in England and Ireland. In Scotland N. (at Lairg) the thermometer rose to 86°, and in Scotland W. and Ireland S. (at Killarney on Thursday) to 85°, while elsewhere the maxima varied from 84° in Scotland E. to 76° in Scotland N.E. During the latter days of the week, the maxima were below 60° at some stations in the east and north-east coasts of Britain. The lowest of the minima, which occurred, as a rule, rather late in the week, ranged from 40° in Scotland N. and England F. to 48° in England N.W. and the English Channel, and to 51° in Ireland.

The mean temperature of the sea. The water was much warmer than during the preceding week, the increase of temperature amounting to more than 4° in some places. The actual values for the week ranged from 61·7° at Eastbourne, 61·1° at Margate and Seaford, and about 60° on the north-west coast of Ireland and at Newquay, to 51·3° at Larkwick and to 50·8° at Wick.

The rainfall was below the average very generally. Over a large part of Great Britain the week was rainless.

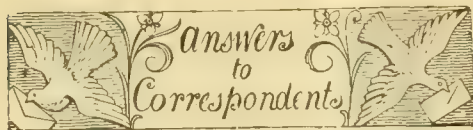
The bright sunshine exceeded the average in all districts, the percentage of the possible duration ranging from 73° in the English Channel, 67° in England S.W., 58° in England S., and 57° in England N.W. to 42° in Scotland E., and to 35° in England N.E.

THE WEATHER IN WEST HERTS.

Week ending July 24.

The first five days of the week were very much cooler than the day temperatures have been for the time of year. The nights have been, as a rule, of about seasonable warmth. On the warmest day the temperature in the thermometer screen rose to 77°, which, although only about 6° higher than the average for the middle of July, is the highest reading as yet recorded here during the present summer. The day has been warmer than at any previous time this month, but is still 1° colder at 2 feet deep, and 2° colder at 1 foot deep, than is seasonable. After 10 dry days there came two wet ones, indeed, taking them together more rain fell than in any two consecutive days during the previous eight months, and yet the aggregate fall amounted to only 1½ inch. This heavy fall, which was deposited almost entirely during thunderstorms, restarted even the percolation course, which short grass is growing, through which no rainwater at all had come for over a month. The sun shone on an average for 14 hours a day, which is more than 14 hours a day short of the July average. On two days no sunshine at all was recorded. The weather has now been calm, or with very light airs, for a fortnight, the direction of the air currents being mostly south-east, the compass between north and east. The mean amount of moisture in the air at 3 p.m. exceeded a seasonal quantity for that hour by as much as 10 per cent.

Correction. In my previous report I said that the highest temperature of the week, 76°, was the warmest as yet recorded here this year, but I find that in the middle of May I registered 79°. E. M., Berkhamsted, July 24, 1907.



* * In our next issue we hope to publish the reports kindly furnished by our correspondents on the condition of the hardy fruit crops.

APPLE LEAVES: *W. E. M.* The leaves are not affected with any disease, but the tissue has been injured by chills when moisture was present on the surface.

BOOKS: *G. W. S.* *The Fruit Grower's Year Book* can be obtained from our publishing department, price 1s. 3d. free by post.—*Correspondent.* *Rock and Alpine Gardening* may be obtained from our publishing department, price 3s. 6d. post free. Owing to a printer's error the price was described as 8s. 6d. on p. 45 of the last issue.

CLEMATIS DYING: *G. H., Windermere.* The material you send is insufficient for correct determination of the cause of the complaint.

CUCUMBERS DISEASED: *D. D.* The foliage you send is affected with the "spot" disease, caused by a fungus *Cercospora melonis*. This is generally the result of growing the plants in a too moist atmosphere, using too much manure, and not providing sufficient ventilation. Spray every portion of earth in the house with Bordeaux mixture once a week from the first, even when there is no evidence of the disease. With persistent attention the disease can be stamped out; or, better, it can be prevented from appearing by spraying with sulphide of potassium, 2 ounces in 3 gallons of water in which 2 ounces of soft soap is dissolved. Infection can only take place on the under-surface of the leaf, hence this portion should be thoroughly wetted with the fungicide. Syringe with this solution every alternate day.

FIGS UNHEALTHY: *Elaph.* We have failed to discover any disease on your specimens; the unhealthy appearance is the result of some cultural defect.

GRAPES DISEASED: *T. C., W. M.* The berries are affected with the spot disease. See reply in our last issue to *F. G. B.*, p. 60.

LIST OF POPULAR HERBACEOUS PLANTS, &c.: *G. E.* You should have furnished us with some particulars of the position, area, &c. The perennials could be planted any time after August, or, by obtaining pot grown plants, the planting could be done at once. We do not advise the latter method for your purpose, however, and by waiting till September next—it is, of course, too late to expect any display this year whatever is done—larger plants would be available, and these would give a good display of flowers next year. *Perennial herbaceous plants:* *Coreopsis grandiflora*, *Gaillardia grandiflora*, *Erigeron speciosus superbus*, *Campanula persicifolia* var. *Moerheimii*, *C. p. alba coronata*, *C. p. "Newry Giant"*, *C. p. grandiflora*, *C. van Houttei*, *C. nobilis*, *Trollius "Orange Globe"*, *T. asiaticus*, *T. napellifolius*, *Iris Mrs. Chas Darwin*, *I. L'Innocence*, *I. Mme. Chereau*, *I. aurea*, *I. pallida*, *I. Dr. Bernice*, *I. gigantea*, *Aster acris*, *A. Amellus*, *A. ericoides*, *A. laevigatus*, *A. densus*, *A. arcturus*, *A. cordifolius*, *Pyrethrum roseum Hamlet*, *P. r. Mrs. Bateman Brown*, *P. r. Carl Vogt*, *P. r. J. N. Twerdy*, *P. r. Pericles*, *P. r. Ne Plus Ultra*, *Achillea alpina*, *A. ptarmica fl. pl.* and the variety *The Pearl*, *Lathyrus latifolius*, *Montbretia*, *Chelone barbatus Torreyi*, *Delphiniums* in variety, herbaceous *Phloxes*, including the varieties *Mrs. E. H. Jenkins*, *Etna* and *Wm Robinson*, *Helianthus multiflorus*, *Dianthus barbatus magnificus*, *Pinks* of several sorts, &c. If to the above you add the following bulbous rooted plants, the season of flowering would be greatly prolonged. Not all, however, of these should be planted in September, *Galtonia candicans*, Spanish *Iris* in variety, *Lilium tigrinum*, *L. croceum*, *L. candidum*, *Narcissus Emperor*, *N. Sir Watkin*, *N. princeps*, *N. Barrii-conspicua*, *N. poeticus ornatus*, *N. Empress*. Of these bulbous plants you should purchase six or a dozen of each to form a group; plant the bulbs 4 inches deep.

Of the Spanish *Iris*es, a hundred may be purchased for a small sum. The annuals should include *Mignonette*, *Godetia*, **Cornflowers* (*Centaurea cyanus*), *Candytuft*, *Sweet Sultan* (*Centaurea*), *Stocks*, *Marigold*, **Sweet Peas*, *Chrysanthemum*, *Salpiglossis*, *Nasturtium*, *Love-in-a-Mist* (*Nigella*), *Nemophila*, &c. Sowings of these should be made from March to May. The *Sweet Peas* and the *Cornflowers* marked thus * should be sown in February, or *Sweet Peas* could be sown in autumn.

MELON ROOTS KILLED: *G. B.* We suspect the injury has been caused by either wire worms or some insect pest that was introduced with the freshly-cut turves. Soil obtained from a pasture and intended for the cultivation of Melons and other plants in a glasshouse should be stacked for a period before being used.

NAMES OF FRUITS: *T. M.* The Gooseberries are badly grown fruits, and owing to their small size we cannot name them with any degree of certainty. They resemble the variety *Lancashire Lad*.—*A. B. H.* *Peach Dymond*.

NAMES OF PLANTS: *H. G. H.* 1, *Cupressus Lawsoniana*; 2, *C. pisifera* var. *plumosa*; 3, *Streptosolen Jamesoni*; 4, *Juniperus chinensis* var. *aurea*.—*F. C.* We do not undertake to name varieties of *Carnations* or other florists' flowers.—*Avonhurst.* We do not undertake the naming of *Roses*. The shrub is *Lycium Chinense*, the Tea Plant.—*T. W. C.* 1, *Dictamnus fraxinella*; 2, *Lychnis viscaria flore pleno*; 3, *Sedum Sieboldii*; 4, *Bambusa Fortunei variegata*.—*W.* *Coryanthes speciosa*.—*Mill Hill.* *Lapeyrusia cruenta*, more commonly known as *Anomatheca cruenta*. The spots on the *Begonia* foliage are caused probably by condensed moisture settling on the plants at night.—*P. H.* 1, *Masdevallia demissa*; 2, *Babiana sambucina*; 3, *Stelis ophioglossoides*; 4, *Epidendrum ochraceum*; 5, *Seraphytha multiflora*.—*Don.* *Agrostemma coronaria*.—*L. H.* 1, *Fuchsia procumbens*; 2, *Verbascum Thapsus*; 3, *Campanula rotundifolia alba*; 4, *Lapsana communis*; 5, *Phalaris canariensis*.—*J. W. W.* 1, *Robinia hispida*; *Erigeron philadelphicus*.

NECTARINES: *C. D.* The markings on the foliage are not due to fungus, but to a deposit of lime from the water with which they have been syringed. The cracking in the fruits is the result of some irregularity in watering the border, or to some defect in the drainage of the latter.—*Elaph.* The splitting of the fruits is caused by the presence of too much moisture at the roots.

PEONIES DISEASED: *E. B.* Your plants are affected with the drooping disease, caused by a fungus *Sclerotinia pæoniae*. Cut off the drooping stems and burn them. Early next spring remove the upper 2 inches of soil over the roots and afford fresh soil that has some quicklime mixed with it.

PEACH LEAVES INJURED: *G. H. B.* The markings on the foliage are caused by the shot-hole fungus—*Cercospora circumscissa*. Spray the trees with an ammoniacal solution of copper carbonate at intervals.

PEACHES ROTTING: *Correspondent.* The fruits on reaching us were a mass of pulp, and it was quite impossible to determine the nature of the trouble. The foliage received shows no trace of fungus disease.

PEAR LEAVES INJURED: *Leven.* The injury has been caused by the Pear-leaf blister mite. Spray the trees thoroughly with paraffin emulsion prepared by boiling together equal proportions of paraffin and soft soap. This should be thoroughly mixed with 25 times its bulk in water. Apply the spray in the autumn and again in the following spring, when the leaves are expanding.

PLANTS FOR SUPPLYING CUT FLOWERS: *T. H. S.* The following is a selection from the list given in our issue for February 10, 1906, p. 96:—*Roses*, *Carnations* and *Pinks*, *Campanulas*, herbaceous *Phloxes*, *Michaelmas Daisies*, *Sweet Peas*, and *Pyrethrum roseum*. We may also include *Dahlias* and any of the *Sun-flowers*, especially *Helianthus multiflorus*.

Any of the varieties mentioned in our previous reply will be found excellent garden plants. The *Chrysanthemums* enumerated are varieties of the hardy *C. maximum* and not the Japanese winter-flowering type. *Mrs. Head* is correct.

PLANTS OBSERVED AT KEW: *Amateur.* The *Petunias* noticed in the beds near to the main walk leading from Kew Green are the varieties *Superbissima* and *Inimitable*, the former having varied and spotted flowers, and the latter striped flowers. The *Poppies* growing in a bed near to the temperate house are varieties of *Papaver somniferum* (*Opium Poppy*). The variety *pæoniaeflorum* has double flowers. The *Convolvulus* near to the entrance to the grounds attached to the Queen's Cottage is *C. sylvaticus*, also known as *Calystegia sylvatica*. There is a form with pink flowers named *incarnata*.

PUBLIC PARKS EMPLOYMENT: *A Reader.* Your better plan will be to write to the superintendent of any of the parks you may prefer to work in, asking for a form of application. Almost all parks are provided with glass structures; some have very extensive and up-to-date plant houses and frames.

RHODODENDRONS DISEASED: *A. W.* The galls on the leaves are formed by a fungus—*Exobasidium rhododendri*. The spores of the fungus are not yet matured on your plants, so that if all the diseased leaves are collected and burnt the disease will not spread.

ROSES DISEASED: *D. Bros.* The foliage is attacked by the orange rust fungus *Phragmidium subcorticatum*. Spraying with diluted Bordeaux mixture or ammoniated carbonate of copper solution at intervals during summer will check the spread of the disease. Burn all the diseased leaves now and all fallen ones in the autumn.

STRAWBERRIES INJURED: *A. B. Bosworth.* The insect attacking your Strawberries is one of the millipedes, "the spotted snake millipede" (*Blanjulus guttulatus*). These generally feed on the roots of plants, but they are also fond of Strawberries. Straw or lawn mowings placed about the plants provides them with a convenient shelter. They may often be attracted from the roots of other plants by burying slices of Turnips, &c., but millipedes are especially fond of Strawberries and it is difficult to suggest what to do under the circumstances. Raising the fruits from the ground by means of wire or other supports would largely prevent this and other insect pests from attacking them, but it would be expensive and troublesome in the case of large beds. Perhaps the best thing to do would be to go over the beds and gather all the fruit that was infested and burn it. As soon as the fruits are all gathered collect and burn any infested fruits, rubbish, dead leaves, &c., on the beds.

URINE: *J. D. S.* Human urine contains a large proportion of ammonia, and is more than twice as rich in plant-food as pigs urine, one-third richer than cow's urine, but not so rich in this nitrogenous food as horse or sheep urine. It also contains some phosphates. The best plan for utilising this liquid is to put it into a tank or tub with all the household slops (suds but not grease), or with twice its bulk of common water. Allow it to stand for three or four days to ferment, then apply it during wet weather to Cabbages, Lettuce, Celery, Ferns, shrubs and fruit trees. It is not adapted for flowering plants, as it favours the development of foliage at the expense of flowers, which is the case with all manures that are strong in ammonia.

WARTS ON VINE LEAVES: *G. H. B.* The warty excrescences are due to a too luxuriant growth in the cellular tissue, brought about by an excessively moist and close atmosphere in the vinery. Ventilate more freely, and place less moisture about the house.

COMMUNICATIONS RECEIVED.—*E. H. J.*—*J. G. W.*—*Sir J. T. D. Ll.*—*Lord Avebury*—*A. D.*—*Lord B.*—*Lady Plowden*—*W. L.*—*W. H. C.*—*T. H.*—*S. T. W.*—*Sir W. V.*—*G. T. G.*, *Paris*—*W. A. C.*—*Sir W. C.*—*S.* and *S. T. R.* and *Sons*—*J. E. M.*—*G. F. R.*—*O. B. L.*—*S.*—*W. E.*—*J. C.*—*J. W. P.*—*Mrs. M. P.*—*J. I. M.*—*Hargrave*—*W. G.*—*G. W. A. J.*—*Glassevin*—*F. O.*—*J. J. F.*—*J. M.*—*W. T.*—*W. G.*—*A. E.*—*J. M. W.*—*W. H.*—*H. C.*—*R. T. H.*—*W. E. G.*—*S. A.*—*J. L.*—*E. A.*—*W. M.*—*A. P.*—*J. C.*—*F. M.*—*East Sussex*—*C. B.*—*W. S.*—*R. N.*—*T. S.*—*H. W. W.*

THE

Gardeners' Chronicle

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THE COUNTRY GARDEN.

CONTINUING the subject of the wild garden as a desirable and decorative feature in the garden proper, I would remind my readers that the seeds of some of the best indigenous plants are obtainable from certain seedsmen. It should go far to facilitate their cultivation, for there is no method so conducive to beautiful effect as growing from seed, as it ensures, or should ensure, an ample supply of plants for the making of a broad effect.

Where the wild garden is large enough, it adds greatly to its interest, and that is much the same as saying, its beauty, to include a portion of wild rock-garden. It may well take the form of a sunny, sloping bank at one of its boundary limits; and a really effective and long-sustained display can be achieved by our native wildings alone. A broad stretch of Toad Flax makes a charming patch of clear yellow—it is one of the most decorative plants to use for a summer display. For the same season Campanula latifolia is an equally suitable subject; and besides this species may be included C. Trachelium, C. hederacea, and our wayside C. rotundifolia. There is almost as much daintiness and grace in the yellow-flowered and white-flowered Galium verum (Lady's Bed Straw) as there is in the popular garden Gypsophila; they grow in wide-spreading masses, and before the flowers appear the foliage has long been attractive with its gracefulness. Foxgloves and Mulleins are distinct and characteristic upstanding plants—upstanding, yet needing no artificial support, and that fact adds much to their charm. I have no hesitation in recommending these tall subjects for the wild rock garden, because a fair proportion of tall

plants adds much beauty. Another good subject is the yellow Loosestrife (Lysimachia vulgaris). It flowers in July, and will succeed with far less moisture than is generally known. So, for that matter, will the Purple Loosestrife (Lythrum salicaria), but these plants succeed better on the level or in a slightly dug-out position than where the drainage is sharper. In the case of the Purple Loosestrife, however, it is worth while to forego the wild species for the more brilliant variety L. s. superbum.

Wild plants of annual habit prolong the summer display, the Corn Marigold (Chrysanthemum segetum), and the blue Cornflower (Centaurea Cyanus), and even Red Weed or Poppy (Papaver Rheas) are not to be wholly despised. A charming evergreen plant of shrubby growth is the yellow Rock Rose (Helianthemum vulgare). It cannot have too sunny a position, and during its flowering season it forms a grand patch of colour. Ling (Calluna vulgaris) and Heather should be planted largely enough to form a conspicuous patch when in flower, and certainly ample space may be left for the Welsh Poppy (Meconopsis cambrica) and the Mountain Avenas (Dryas octopetala). The Welsh Poppy flowers well when exposed to a minimum of sunshine, and under fairly dense shade. I look upon it as one of the invaluable plants for a shaded position, especially if planted in a site with a north aspect. Among the more characteristic plants suitable for carpeting a rockery may be mentioned Saxifraga oppositifolia, S. hypnoides, S. granulata, S. umbrosa, and S. aizoides; Sedums of such species as S. anglicum, S. reflexum, S. acre, S. album, S. Telephium, and the charming old-fashioned native Sempervivums; to these may be added the Thrifts (Armeria), Thymes, Sandworts (Arenaria), and the varieties of brilliantly-coloured wild Dianthus.

There is, however, no need to give an exhaustive list, but I may add that a touch of blue colouring, especially in summer time, is attractive, and, perhaps, is best achieved in Echium vulgare, Succory (Cichorium Intybus), and Veronica spicata. Both Echium vulgare and the Succory are best grown in poor soil; indeed, the former will flourish in gravel, and, as to Veronica spicata, it is one of the showiest of rock-loving plants. Besides these there is the annual Cornflower already mentioned.

Other native plants often found in gardens, and that are really pleasing, are Valerian, Tansy (Tanacetum vulgare), and Cranesbill (Geranium). So much for the wild rock garden, and I cannot help thinking that even a small portion uninvaded by plants of alien birth has a peculiar interest if well and effectively planted. Some of our native plants improve wonderfully under garden cultivation, and when this is the case, it is highly interesting to grow such plants from seeds, and to watch the results.

I have not yet touched on the subject of introducing alien plants into portions of the wild garden other than the rockwork portion. It is a subject that needs the most careful consideration. The inclusion of plants that seem to have bed or border stamped upon them, that is to say, have nothing in common with the wildings with which they are to be associated, is hopelessly to mar the general effect. But there are numbers of plants that can be introduced in the wild garden with no sense of incongruity. Among these I would mention the handsome Heracleum giganteum, almost any varieties of Solidago (Golden Rod), Linaria dalmatica, and any of the other Linarias, the Polemoniums; such of the Geraniums as G. ibericum, G. Grevilleanum, &c., many of the Spiræas, and the herbaceous Veronicas. I have always found it a good test of suitability for a plant to possess some allied species in our native flora. Thus it appears

to me, that such a plant as Anthemis tinctoria is perfectly in keeping in the wild garden, but a Helianthus would appear out of place, and so would a Gladiolus. The main thing in planting a wild garden, so far as the introduction of alien plants is concerned, is to satisfy one's sense of the fitness of the subject for its surroundings. *Practical Gardener.*

NEW OR NOTEWORTHY PLANTS.

FELICIA (AGATHÆA) PETIOLATA.

THIS species is a new introduction to cultivation. It was first described by Harvey in his *Thesaurus Capensis*, vol. ii., p. 35, t. 154, as *Aster petiolatus*, and under this name is included in Harvey and Sonder's *Flora Capensis*, vol. iii., p. 80. The material on which Harvey founded the species was collected by Mr. Thomas Cooper in Basutoland and the District of Albert in 1861, since which time it appears to have altogether escaped notice until M. Dieterlin recently sent a specimen from Basutoland to the Montpellier Botanic Garden. The plant has pendulous or procumbent slender pubescent stems 1-2 feet long, or sometimes longer, which, as described by Mr. Cooper, hang in festoons over the edges of precipices. The shortly-stalked, ovate, pubescent leaves are $\frac{3}{4}$ -1 inch long, acute, and two or three-toothed on each side. The plant is free-flowering, and the heads are $\frac{3}{4}$ -1 inch across, solitary on slender peduncles about 2 inches long; the ray-florets are of rosy-purple colour, and the disc florets yellow. Following Bentham and Hooker's *Genera Plantarum*, the plant should be regarded as a Felicia, depending chiefly on the characteristic feature of this genus, namely, a one-seriate pappus, while in *Aster* the pappus is two or three-seriate. From the well-known *Agathæa cœlestis* (or *amelloides*) it is easily distinguished, among other characters by its procumbent or pendulous stems and its alternate, toothed leaves.

The illustration at fig. 34 has been prepared from fresh material kindly sent us by M. F. Denis, Balarac les Bains, Herault, France, who writes as follows:—"The Montpellier Botanical Institute in 1903 received some dried plants from Basutoland from M. Dieterlin. M. Daveau, Curator of the Botanic Garden here, who examined these, noticed an interesting composite, which bore only its native name of *Ketolice es Rhaba*. He provisionally identified it with *Agathæa* (*Aster*) *petiolata* (Harvey and Sonder).

"The specimen bore several ripe seeds, which were sown in 1904. One of the seedlings which sprang up was put in a composite border, and another in a small rockery exposed to full sunshine and quite unsheltered. The first plant was killed by frost early in the winter, the second lived for three winters with no protection, and is in excellent condition, although on several occasions the temperature of the atmosphere fell below 10°C. I have three plants raised from cuttings given to me by M. Daveau, which survived last winter perfectly. The plant may therefore be considered to be hardy in the climate of Montpellier, and so, probably, in England also.

"The plant has a creeping habit, and rapidly spreads its long flagelliform branches, which root freely. It is very floriferous, and its pretty mauve flowers are rather smaller than those of *Agathæa amelloides*, and are open the greater part of the year. The plant requires no special kind of soil, and it can be easily increased from cuttings or seed. If any readers of the *Gardeners' Chronicle* wish to cultivate the plant, I have some seeds which were gathered this year in our Botanic Garden at Montpellier."

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Newly-imported plants of Cypripediums, including *C. niveum*, *C. concolor*, *C. bellatulum*, *C. Godefroyæ*, and its variety *leucochilum*, invariably thrive and flower well for several years after their introduction if left undisturbed, but when it becomes necessary to repot them, or to disturb them at their roots in any way, they do not as a rule appreciate the operation. Therefore, unless a shift is absolutely needful, it is better not to repot them, but rather to pick out a portion of the decayed material, and to refill the spaces with fresh compost. Plants that must, from various causes, be repotted, should now receive attention, and those which are well rooted will require exceptional care, because the roots, being of a very brittle nature, frequently snap off by the merest touch. The pot in which the plant is growing should be gently broken round, and the pieces of crock that formed the drainage material carefully removed. Some roots may adhere to these potsherds, and they should be detached with the thin blade of a penknife, but should there be the least fear of breaking a root, it is better to leave it adhering to the crock rather than to break it in attempting to remove it. If the drainage be permeated with roots, do not interfere with it, but place the whole mass into a larger pot or pan, whichever may be preferred, and fill up to the level of the old drainage with fresh crocks and pieces of broken bricks. I have grown these plants in several kinds of compost, and have succeeded best with the following mixture:—Two-thirds fibrous loam, one-sixth coarse leaf-soil, and one-sixth small brick-rubbish. In repotting, keep the base of the leaves on a level with the rim of the pot, make the drainage secure with the roughest of the compost, and press the latter down firmly around the base of the plant, leaving sufficient space for watering. These species thrive best when suspended from the roof of the Cattleya house. *C. niveum* and *C. concolor* require a plentiful supply of water the whole year round. Instead of watering them in the usual manner with a can, dip them in a pail of water half-way up to the rims of the pots. A watering in this manner about once a week will be generally sufficient. The other species mentioned do not require so much water at their roots as is needed by these two species.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. Thomson Paton, Esq., Norwood, Alloa, Clackmannanshire.

Vineries.—The fruits of Black Hamburg and Madresfield Court Grapes are now rapidly colouring, and the vinery should, therefore, be kept cool by opening both the top and the bottom ventilators to their fullest extent during the day time, and allowing the top ventilators to remain open for a space of 6 or 8 inches and the bottom ones a trifle only during the night time. Allow a little heat to circulate in the pipes at night time, and also on wet, cold days, for this will ensure a circulation of fresh, dry air that is essential to the best colouring of Grapes. On bright, sunny days it is advisable to shade the bunches unless they are well protected by the foliage. A suitable shading material is one composed of 2 lb. of whiting mixed in a pail of water. Syringe this substance on to the glass of the roof in the morning as soon as the moisture has evaporated from the glass. The fruit of the varieties Black Hamburg and Madresfield Court finish best under cool conditions. When the temperature in the vinery reaches 100° or more, and the direct rays of the sun shine on the bunches, the berries of any variety of Grape will surely be disfigured. Test the borders with the soil tester, and if the soil is found to be dry afford a surface watering, and afterwards apply a mulching, unless the border is already covered with litter. This should afford sufficient water at the roots until the end of the season. Guard against attacks of red spider on the foliage, and see that wasps and flies do not damage the ripened berries.

Pot vines intended for fruiting again next year, should have well-ripened shoots by the beginning of August. The canes should be fully exposed to the sunshine and be allowed a free cir-

culatation of air about them. If they continue to grow freely when they should be ripening their shoots, remove them to the open and tie their shoots to a trellis. Do not expose them to cold winds, for these would cripple the foliage.

swell; and whether planted in pots, or in confined borders, the roots must be well supplied with moisture, and be fed with manure water once a week. A handful of fine grade vine manure, well mixed in three gallons of water,



FIG. 34.—FELICIA (AGATHÆA) PETIOLATA: COLOUR OF RAY FLORETS ROSY-PURPLE; DISC FLORETS, YELLOW. (For text see page 81.)

Apply water very carefully, and give a little weak manure water occasionally, for this stimulant will help them to mature their buds.

FIGS.—As soon as the first crop of these fruits is gathered, the second crop will commence to

will be beneficial to the formation of the fruits. Cut out superfluous growths, and allow a maximum amount of light and air to reach the fruit and foliage. Guard against insect pests by syringing with clear water twice daily.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to LORD CLINTON, Bicton,
East Devon.

Plum.—The local crops of this fruit are heavy, and thinning has been necessary in the case of trained trees on walls, &c. Such varieties as Early Rivers, Orleans, Early Prolific, and The Czar will require protection from the birds as soon as they show signs of colouring. Wash the foliage of wall trees with a strong hosing by means of the garden engine: this will remove much dirt and rubbish that is apt to collect behind the branches. Syringe the foliage of late varieties, if the leaves are infested with aphids or red spider, with a suitable insecticide.

Raspberries.—After the fruits have been gathered, cut out all the old fruiting canes, in order that the sun and air may reach the young rods and thus greatly aid their ripening. It may also be found necessary to reduce the number of new growths, especially if this was overlooked earlier in the season. The mulching applied some few weeks ago is now exhausted of its manurial properties, and should be replenished with some good manure. The remaining canes should be loosely tied to the wires or poles, to prevent the wind from twisting them off at their bases: the final training must be deferred until the winter.

Fruit trees on walls require frequent attention in the matter of training the growing shoots to the trellis or wall; if this is persistently practised, the fruits will receive all the benefit of air and sunlight. Peach and Nectarine trees have both made rapid growth. The fruits of early varieties must be examined each day, in order to gather those that will part freely from the tree. Continue to syringe with clear water trees of late-fruited varieties, and do not neglect to furnish ample moisture at the roots now that the fruits are swelling.

Apricots.—In gathering early fruits, exercise great care, as they are easily damaged. It is not often that birds interfere with Apricots in these gardens, but a watch must be kept as the Apricots ripen, and if the fruits are molested the trees must be netted. Set traps for earwigs, as advised in the Calendar for July 20.

THE FLOWER GARDEN.

By A. C. BARILETT, Gardener to Mrs. FORD, Pencarrow,
Cornwall.

Herbaceous flowering plants.—Continue to stake and tie all plants which need support, as often as may be necessary. Care and judgment must be exercised in respect to such subjects as Michaelmas Daisies that they are not tied together too tightly, and so present a bunched-up appearance, thus destroying that free, graceful habit which is one of the charms of these plants. Lilliums and all plants with stout stems will need a stake to each stem. The stake should be placed behind the stem, and be as inconspicuous as possible. Although the appearance of the border of herbaceous plants is greatly enhanced when the dwarf, creeping plants at the front are allowed to ramble beyond the strict confines of the border, yet when the edge is composed of clipped Box, these front row plants must not be allowed to cover the Box edging for more than a few weeks, or portions of the Box will be killed outright. Frequent hoeing and weeding are now necessary to keep the borders clean. As the earlier flowering plants ripen their foliage, it may be cut away; the time has come for so dealing with the Pæonies, and the gaps thus made should be filled with annuals or other plants, the preparation of which was recently advised. These plants should be lifted carefully, and after they have been re-planted, be afforded a good watering, and provided with shade during sunny weather.

Roses.—As the flowers fade, they should be cut off, so that the strength of the plant will not be exhausted in the forming of seeds. Continue to syringe Rose plants with an infusion of quassia chips to prevent green fly establishing itself on the shoots. Some manurial assistance is very beneficial to Roses at this period, and where the beds are carpeted with Violas, or other dwarf plants, more water will be needed than is the case where the beds are reserved for Roses alone, and a mulch has been applied.

Sweet Peas now require longer sticks. The faded flowers must be daily removed, for if the plants are allowed to produce seed, the supply of flowers will cease. If not already done, lay a mulch along each side of the rows to conserve the moisture in the soil.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq.,
Eastwell Park, Kent.

Perpetual-flowering Begonias.—The charming variety known as President Carnot being ever green, and of a very robust habit, is specially suited for training on upright pillars, or on wires under the roof-glass. The latter situation is probably best of all, as the large pendulous clusters of rich carmine-coloured flowers show to great advantage in such a position. A warm or intermediate house is the most suitable for this class of Begonia, and when once established the plants will flourish for a considerable time, needing very little attention beyond the cutting out of the old growths in spring and occasionally thinning out the young shoots. In the operation of potting, employ a compost consisting of equal parts turfy loam, rough leaf soil, and manure from a spent mushroom-bed. Other good varieties suitable for growing in the same conditions are B. fuchsoides and B. coccinea. B. fuchsoides has small, bright coral-red coloured flowers, which are produced in great profusion; coccinea has a larger habit in both leaf and flower, the bloom being produced in panicles similar to those of President Carnot, but of a more vivid colour. These are strong-growing varieties, and they succeed better when planted out in a border than when the roots are confined to pots. Keep a careful look out for "rust," small thrips, fly, and other pests. A mild fumigation at regular intervals will be the best preventive.

Primulas.—Repot the early batches as this becomes necessary, using a light porous compost containing plenty of sand. Large pots are not necessary, those of medium sizes being generally most useful. If, however, large specimens are required, strong plants of the P. stellata type will make good specimens in 8-inch pots, and if well cultivated will become perfect pyramids of bloom in the winter and early spring months. Later batches of seedlings should be carefully pricked off into very light soil as soon as they are large enough, not allowing them to become "drawn" in the seed-pan. P. x kewensis is a useful hybrid, which makes a good companion to P. obconica, requiring the same cultural conditions; its clear yellow flowers are very attractive, and the plants continue in bloom for months together.

Cinerarias.—Repot the plants before they become pot-bound, remembering that Cinerarias are liable to suffer greater harm from this cause than most plants. After repotting the plants replace them on an ash bottom in a frame; and it will be better if the frame is situated behind a partially shaded wall; in any case the plants will need shade during the hottest part of the day. For potting, use good loam, leaf-soil and well rotted manure in equal proportions. When the plants have been potted for the last time and have filled the pots with roots, applications of weak manure water should be afforded them, alternating these with soot-water. Green-fly must be fought unceasingly, Cinerarias being particularly susceptible to attacks from this pest.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq.,
Cobham Park, Surrey.

Turnips.—No time should now be lost before making the final sowing of Turnip seed, for raising a crop for use during late autumn and winter. Although the bulk of this sowing should consist of the hardy varieties such as Green Top and Chirk Castle, if the present supply is at all scant a few rows of early Snowball will prove very useful. The ground intended for Turnips should be richly manured, and the manure should be kept close to the surface—to promote a quick growth, whilst the plants are young—thus assisting them the better to withstand the attacks of the fly which in some districts, and in some seasons, proves so fatal to Turnip crops. A light sprinkling of soot applied overhead when the plants are damp will check this pest if used as soon as the attack is observed.

Parsley.—If sowings have not already been made for raising Parsley for use during winter and early in spring, the work should be given attention without delay. Two of the most decorative and hardy varieties are Ex Ex Garnishing and Imperial Curled. The ground should already have been well prepared. In cold districts the seed should be sown in short drills, that the plants may be given the protection of some old glass "lights" during severe weather in winter, and when a fall of snow is expected.

Autumn-sown Onions.—With the object of checking top-growth and diverting the strength more into the bulbs, the necks of these plants should now be twisted, or bent down with the back of a wooden rake. This will also allow the light and air to reach the bulbs more easily.

Peas.—The early and second early crops of Peas being now past, the plants should be cleared off the ground, and the sticks may be again utilised for the plants raised from the latest sowings. The ground thus cleared may be prepared for the planting of Cabbages. It will be all the better for being prepared some time before it is required for use. These remarks will also apply to the ground on which it is intended to sow the Onion seed during the present month.

Early Potatoes.—These should now be lifted, particularly those that have Cauliflowers or winter Greens planted between the rows. If the tubers can be suitably stored, there is nothing to be gained by leaving them longer in the ground.

PUBLIC PARKS AND GARDENS.

By W. W. PETHIGREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

The August Bank Holiday.—This holiday, for various reasons, is usually the busiest day of all the year in the majority of British public parks. Being practically the last national holiday of the year suitable for the enjoyment of out-of-door amusements and sight-seeing, it is invariably taken advantage of by all classes of the community. Many of the excursionists who flock into all large towns and cities on that day naturally find their way to the public parks and open spaces, where there is plenty of room and ample freedom for families to enjoy themselves at little or no cost. Although nominally the first Monday in August is the holiday, the whole week is generally given up to holiday-making, thus causing popular parks to be filled with visitors the whole time. At such seasons it is found necessary to greatly increase the staff of park police, as more wilful damage is often done during holidays than at any other period of the year. It is undoubtedly false economy to forbear from putting on extra men, even at an enhanced wage, during holiday time.

Special amusements.—Since the average visitor out for the day soon tires of walking about the parks admiring the trees, flowers, and grass swards, it is well for the authorities to provide some special amusements and attractions suitable to the occasion. Where the power exists to make charges, well-organised entertainments not only help visitors to spend a pleasant day, but considerably assist in filling the coffers of the department. Some park authorities, where they have ground suitable for the purpose, promote athletic sports, from which they reap a rich harvest; others hold flower shows, while nearly all provide a number of bands. Parks which make provisions for such games as bowls, quoits, croquet and tennis, or offer facilities for cricket and other open-air sports, help great numbers of visitors to pass the time pleasantly either as onlookers or participants in the various games. The more that can be done in any of the directions indicated, the better will it eventually be for the public.

Work of clearing-up.—A public park after a general holiday in summer is usually a sorry sight, with trampled lawns and every space freely littered with paper, banana skins, and other refuse. Notwithstanding the presence of refuse boxes and baskets and the existence of stringent by-laws on the subject, the freedom of the British holiday-maker in his method of disposing of his paper bags, newspapers, &c., cannot be restrained. Under these circumstances, it is not surprising that park officials are invariably relieved when August Bank Holiday week is over, and matters once more assume their normal condition.

REPORT ON THE CONDITION OF THE OUT-DOOR FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS.]

THE WORDS "AVERAGE," "OVER," OR "UNDER," AS THE CASE MAY BE, INDICATE THE AMOUNT OF THE CROP;
AND "GOOD," "VERY GOOD," OR "BAD," DENOTE THE QUALITY.

FULLER COMMENTS WILL BE GIVEN IN THE FOLLOWING NUMBERS. SEE ALSO LEADING ARTICLE ON PAGE 50.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND.										
0. Scotland, N.										
CAITHNESS	Average; good	Average; good	.....	Under; bad	.....	.....	Average; good	Average; very good	.....	W. F. Mackenzie, Thurso Castle Gardens, Thurso.
MORAYSHIRE	Over; very good Over	Average; good Over	Average; good Over	Over; very good Average	Over; good Average	Over; good Over	Average; good Over; good	Average; good Under; good	.....	William Ogg, Duntus House Gardens, Elgin. D. Cunningham, Darnaway Castle Gardens, Forres.
ORKNEYS	Average; good	Under; bad	.....	Average; good	Average; good	.....	Under; bad	Average; good	.....	Thos. MacDonald, Balfour Castle Gardens, Orkney.
SUTHERLANDSHIRE	Average; good Under	Under; bad Average	Average; good Under	Average; good Under	.....	Under; bad	Over; very good Average; good	Over; very good Average; good	Average	John McIver, Skibo Castle Gardens, Dornoch, N.B. D. Melville, Dumborn Castle Gardens, Sutherland.
1. Scotland, E.										
ABERDEENSHIRE	Average; bad Under	Average; bad Under	Average; good Average	Over; good .....	.....	.....	Over; very good Over; good	Average; good Under; bad	.....	James Grant, Rothienorman Gardens, Rothie. John Brown, Delgaty Castle Gardens, Turriff.
BANFFSHIRE	Average; good Under	Under Average	Over; very good Average	Over; very good Over; good	.....	.....	Average; good Over; good	Over; very good Under; fair	.....	Simon Campbell, Fyvie Castle Gardens, Fyvie. John M. Troup, Balmoral Castle Gardens, Ballater.
BERWICKSHIRE	Under	Under	Over; very good Average	Over; very good Over	.....	.....	Over; very good Over	Average; good Average	.....	Geo. Edwards, Ballindalloch Castle Gardens, Ballindal- loch.
CLACKMANNAN- SHIRE	Under	Under	Over; good Average	Over; good Over	Average	Average	Over; very good Over	Average; good Average	.....	Robert Stuart, Thirlestane Castle Gardens, Lauder. Alexander Kirk, Norwood Gardens, Alloa.
EAST LOTHIAN	Average; good Over; very good Under	Average; good Under; good	Over; good good Under	..... Under Under	Over; good very good	Over; good Average	Over; good very good Over; good	Under; poor Over; poor Average	.....	R. P. Brotherton, Tynning- hame Gardens, Prestonkirk. William Galloway, Gosford Gardens, Longniddry.
FIFESHIRE	Under	Under	Under	Average; good Average	.....	Over	Over	Over	.....	William Henderson, Balbir- nie Gardens, Markinch. Chas. Simpson, Wemyss Castle Gardens, E. Wemyss.
FORFARSHIRE	Under	Under	Average	Average; good Average	.....	Average	Average; good Average	Average; good Average	.....	Thos. Wilson, Glamis Castle Gardens, Glamis. William Alison, The Gardens, Scaview, Monifieth.
KINCARDINESHIRE	Average	Average	Under	Under; good	Under	.....	Over; good	Over; good	.....	John M. Brown, Blackhall Castle Gardens, Banchory.
MIDLOTHIAN	Under	Under	Over	Average; good Average	.....	Average	Average; good Average	Average; good Average	.....	William Knight, Fasque Gar- dens, Laurencekirk.
PEEBLESSHIRE	Average; very good Average; good Under	Average; very good	Under Over; good Under	Average; good Average; good Over	Average; good	Average; good	Over; very good Over; very good Over	Over; good Average; good Average	.....	Wm. G. Pirie, Dalhousie Castle Gardens, Bonnyrigg. James Whytock, Dalkeith Gardens, Dalkeith.
PERTHSHIRE	Under; good Over	Under; bad Average	Over; very good Over	Average; good Over	Average; good	Average; good	Over; very good Over	Average; good Over	Average	William Young, Stobo Castle Gardens, Stobo. Wm. McDonald, Cardrona, Traquair, Innerleithen.
6. Scotland, W.	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Farquharson, Kinfauns Castle Gardens, Kinfauns.
ARGYLLSHIRE	Under; bad Under	Under; bad Under	Average; good Under	Average; good Average	Average very good .....	.....	Average; good Average	Average; very good Under	Under	John Robb, Catherinebank, Mlnab Terrace, Crieff. J. H. Fairley, Castle Men- zies Gardens, Abertfeld.
AYRSHIRE	Average	Under	Average	Average	.....	.....	Average	Under; bad	.....	D. S. Melville, Poltalloch Gardens, Lochgilphead.
BUTESHIRE	Average; good Average; very good Under; bad	Under; good Average; very good Under	Under; bad good Average	Average; good Over; good Under	..... Average; good Under	..... Over; good	Over; very good Average; very good Average	Average; good Average; very good Under	Under	Henry Scott, Torloisk Gar- dens, Aros, Isle of Mull. William Priest, Eglinton Gar- dens, Kilwinning.
DUMBARTONSHIRE	Under	Under	Average	Average	.....	Under	Over	Average	Under	John McInnes, Kirkmichael Gardens, by Maybole. D. Buchanan, Bargany Gar- dens, Dailly.
DUMFRIESSHIRE	Average	Under	Average	Average	.....	.....	Under; good	Over; good	.....	M. Hutton, Mount Stewart Gardens, Rathfriland. George McKay, Balloch Castle Gardens.
KIRKCUDBRIGHT- SHIRE	Under; good Under; bad Under; bad	..... Under; bad Under; bad	Average; good Average; good	Average Under; bad Average; good	..... Under; bad	Average Under; bad	Average; good Under; bad	Average; good Average; good	.....	D. Stewart, Knockderry Castle Gardens, Cove. John Urquhart, Hoddum Castle Gdns., Ecclefechan. John MacKinnon, Terregles.
RENFREWSHIRE	Under	Under	Under	Average; good Under	Average; good Under	.....	Over; very good Average; good	Over; very good Average; good	.....	James MacDonald, Dryfe, on Gardens, Lockbie.
STIRLINGSHIRE	Under	Under	Average; good	Average; good	Under	.....	Average; good	Average; good	.....	N. Macfadyen, Glenlee Park Gardens, New Galloway.
WIGTONSHIRE	Under; bad Under	Under; bad Under	Under; bad Average	Under; bad Under	..... Average	..... Average	Average; good Average; good	Average; good Average; good	Under	Wm. Thomson, Cally Gar- dens, Gatehouse. John Methven, Blythswood Gardens, Renfrew. Thomas Lunt, Ardgowan Gar- dens, Inverkip.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
ENGLAND:										
2, England, N.E.										
DURHAM	Under	Average	Average; good	Average; good	.....	.....	Average	Average	.....	Robt. Draper, Seaham Hall Gardens, Seaham Harbour.
	Under	Under	Average	Under	.....	Under	Average; good	Average; good	.....	James Michar, Smeat House Gardens, Howden-le-Wear.
YORKSHIRE	Under	Under	Over	Under	.....	.....	Under	Under	.....	J. Simpson, Stuuaheld, near Sheffield.
	Over	Average	Over	Average	.....	Average	Over	Under	Under	Jas. E. Hathaway, Baldersby Park, Thirsk.
	Under; good	Average; good	Average; good	Average; good	Over; very good	Over; very good	Over; good	Under; bad	Average	J. Allsop, Dalton Hall Gdns., Dalton Holme, Beverley.
	Under	Average; good	Average; good	Average; good	Average; good	Over; good	Over; good	Average	Under	Henry J. Clayton, Wharfe Bank House, Ullskelt, York.
	Under	Under	Over; good	Average; good	Over	Over; good	Over	.....	Under	A. E. Sutton, Castle Howard Gardens, Welburn.
3, England, E.										
CAMBRIDGESHIRE	Average; good	Average; good	Over; very good	Average; good	Over; very good	Average; very good	Average; very good	Under; good	Average	R. Alderman, Babraham Hall Gardens, Cambridge.
	Under	Average	Over	Average	Average	Average	Average	Average	Under	T. W. Burkinshaw, Hatley Park Gardens, Gamlingay.
ESSEX	Average; good	Over; very good	Over; very good	Average; good	Over; very good	Over; very good	Average; good	Over; good	Under	A. Bullock, Copped Hall Gardens, Lippington.
	Under	Average	Average	Average	Over	Over	Average	Under	.....	Henry Lister, Easton Lodge Gardens, Dunmow.
	Average; good	Under; bad	Over; good	Average; good	Average	.....	Over; good	Under; good	Under	W. R. Johnson, Stanway Hall Gardens, near Colchester.
	Under	Average	Under	Under	Average	Average	Over	Average	.....	H. W. Ward, Lime House, Rayleigh.
LINCOLNSHIRE ...	Under	Under	Average; good	Average	Over	Over; good	Average; good	Average; bad	.....	H. Venn, Harlaxton Manor Gardens, Grantham.
	Average; good	Under; good	Average; good	Average; good	Over; very good	Average; very good	Average; very good	Over; very good	.....	F. C. Stansby, Brocklesby Park Gardens.
	Average; good	Under; good	Average; good	Average; good	Average; good	Over; good	Over; very good	Under; good	Under; bad	F. Barton, Hainton Hall Gardens, Lincoln.
	Under; bad	Average; good	Average; good	Under	.....	Over; good	Over; good	Average; good	Under	H. Louth, Boothby Hall Gardens, Grantham.
	Average; good	Average; good	Under; good	Under; bad	Over; very good	Over; very good	Over; very good	Average; good	Under; good	F. J. Fleming, Weelsby Old Hall Gardens, Grimsby.
NORFOLK	Average; good	Average; good	Under; good	Average; good	Over; good	Average; good	Over; very good	Average; good	.....	J. Wynn, Sedgeford Hall Gardens, Kings Lynn.
	Under; bad	Under; bad	Average	Average; good	Average	Average	Over; very good	Over; very good	Average	J. W. Bradbrook, Ketteringham Park Gardens, Wymondham.
	Under	Under	Average	Average; very good	Average; good	Over; very good	Average; good	Under; bad	.....	W. N. Thurston, Wotton Park Gardens, North Walsham.
SUFFOLK	Average; good	Average; good	Over; very good	Average; good	Over; very good	Over; very good	Over; very good	Average; bad	Average; good	Thos. Simpson, Henham Gardens, Wangford.
	Average; good	Average; good	Over; very good	Average; good	Average; good	Over; very good	Over; very good	Average; good	.....	Alfred Andrews, High House, Campsea Ashc, Wickham Market.
	Under; good	Average; good	Over; very good	Average; good	Average; good	Over; very good	Over; good	Average; good	Average	W. Messenger, Woolverstone Park Gardens, Ipswich.
4, Midland Counties.										
BEDFORDSHIRE	Under	Over	Over	Under	Under	Over	Over; good	Average; good	Under	James P. Reid, Cranfield Court Gardens, Woburn Sands, R.S.O.
	Under; bad	Under; bad	Average; good	Average; bad	Average; bad	Average; good	Over; good	Average; bad	Average	H. W. Nutt, Flitwick, Ampthill.
	Under	Average	Over; good	Average	Over; good	Over; good	Average; good	Average	Average	George Mackinlay, Wrest Park Gardens, Ampthill.
	Average	Under	Over; good	Average; good	Average; good	Over; good	Over; good	Average; good	Under	Wm. F. Palmer, Foxfield Gardens, Woburn.
	Average; good	Average; good	Average; good	Average; good	Over; very good	Over; very good	Over; good	Over; bad	.....	C. J. Ellett, Chicksands Priory Gardens, Shefford.
BUCKINGHAMSHIRE	Under; bad	Average; bad	Over; good	Average	Over; good	Average; good	Over; very good	Average; bad	Average; good	James Wood, Hedsor Park Gardens, Bourne Lind.
	Average; good	Average; good	Average; good	Over; good	Average; good	Over; good	Average; good	Average	Under	John Fleming, Wexham Park Gardens, Slough.
	Under; bad	Under; bad	Average; good	Under; good	Average; good	Average; good	Average; good	Average; good	Average; good	W. Hedley Warren, Aston Clinton Gardens, Tring.
	Under; bad	Average; good	Average; good	Under; bad	Average; good	Average; good	Average; very good	Under	Under	James MacGregor, Mentmore Gardens, Leighton Buzzard.
	Under	Under; good	Over; good	Average	Over; good	Over; good	Average	Average	Under	Chas. Page, Droppmore Gardens, Maidenhead.
CHESHIRE	Under; good	Under; good	Under; good	Average; good	Average; good	Over; very good	Over; very good	Average; good	.....	J. Bridge, Morston Hall Gardens, Congleton.
	Under	Under	Average	Over; good	.....	Under	Over; good	Average; good	Under	W. E. Wright, Alderley Park Gardens, Chelford, Cheshire.
	Under	Average	Under	Average	.....	.....	Over; good	Under	.....	Peter Wilkinson, Walton Hall Gardens, near Warrington.
	Average; good	Under	Under; bad	Average	.....	Under	Over; very good	Average; good	.....	N. F. Barnes, Eaton Gardens, Chester.
DERBYSHIRE	Under; good	Under; good	Over; good	Average; good	Average; good	Average; good	Average; good	Under; bad	.....	J. C. Tallack, Shipley Hall Gardens, Derby.
	Under	Under	Under	Average; bad	Under	Under	Over; good	Under; bad	.....	Bailey Wadds, 181, Uttoxeter New Road, Derby.
	Under	Average	Average	Average	.....	Average	Under	Under	Under	T. Keetley, Darley Abbey Gardens, Derby.
	Under; bad	Average	Average	Over; good	.....	.....	Over; good	Under; bad	.....	F. Jennings, Chatsworth Gardens, Chesterfield.
	Average; good	Over; good	Average; bad	Under; bad	.....	.....	Over; good	Average; good	.....	F. G. Mills, Laneside Home Farm, Glossop.
	Average; good	Average	Average; good	Average; good	.....	Under	Average; very good	Average; good	.....	James Tully, Osmaston Manor Gardens.
	Under	Average	Average	Average	.....	Average	Under	Under	Under	J. H. G. Odacre, Elvaston Castle Gardens, Derby.
HERTFORDSHIRE ...	Under	Under	Over	Under; bad	Average	.....	Average; good	Average; good	Average	Thomas Hedley, Lane House Gardens, King's Walden, Hitchin.
	Over; good	Average; good	Over; very good	Over; good	Average; good	Over; very good	Over; very good	Average	Average	C. E. Martin, The Hoo Gardens, Welwyn.
	Under; bad	Average; very good	Over; very good	.....	.....	.....	Over; very good	Under	Average; good	Thos. Rivers and Son, Sawbridgeworth.
	Average; good	Over; good	Under; good	Under; good	Over; good	.....	Average; good	Average; good	Over; good	H. Prime, Hatfield House Gardens, Hatfield.
	Under	Average	Over	Under	Average	Average	Over	Average	Average	F. W. Gooch, Edge Grove Gardens, Watford.
	Under; good	Average; good	Over; very good	Over; very good	Under; bad	Over; very good	Over; good	Average; very good	Under	Edwin Beckett, Aldenham House Gardens, Elstree.
	Under; bad	Average; good	Average; good	Average; good	.....	.....	Average; bad	Under; bad	.....	Arthur Dye, Tring Park Gardens, Tring.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
4, Midland Counties.										
HERTFORDSHIRE ..	Under; bad	Average; good	Over; very good	Average	Average; good	Over; very good	Over; very good	Average; good	Average; good	Wm. Whitelaw, Patchwood Gardens, St. Albans.
	Under	Average; good	Average; good	Average	Average; good	Over; very good	Average; good	Average	Under	Hy. Parr, Trent Park Gardens, New Barnet.
	Average; bad	Average; good	Over; very good	Under; bad	Average; good	Average; good	Over; good	Average; good	.....	C. R. Fielder, North Myms Park Gardens, Hatfield.
	Average	Average	Over	Average; good	Average; good	.....	Over	Average; good	Under	William Poole, Hadham Hall Gardens, Ware.
LEICESTERSHIRE ..	Average; good	Over; very good	Over; good	Average; good	Over; very good	Over; good	Average; very good	Under; bad	Over; good	Stephen Uzzell, Gladstone Court Gardens, Ross.
	Under; bad	Under; good	Average; good	Under; bad	Average; good	Average; good	Over; good	Average; good	.....	Daniel Roberts, Prestwold Hall Gardens, Loughborough.
	Under; bad	Over; very good	Average; good	Over; very good	Over; very good	Over; very good	Over; very good	Under; good	Under; bad	W. H. Divers, Belvoir Castle Gardens, Grantham.
	Under	Average	Over; good	Under	.....	.....	Over; very good	Under; very good	.....	W. Wadsworth, The Nurseries, Barkley Lane, Queensborough.
NORTHAMPTON- SHIRE	Under; good	Under	Under; good	Under	Over; good	Over; good	Average; good	Average; good	Average	F. Ibbotson, Rolleston Hall Gardens, Leicester.
	Under	Average; good	Under	Average; good	Average; good	Over; very good	Average; very good	Average; very good	.....	Robert Johnston, Wakefield Lodge, Stony Stratford.
	Under	Average	Average	Average	Average	Over	Average	Average; very good	Average; bad	H. Turner, Fineshade Abbey Gardens, Stamford.
	Under	Bad	Under	Average; very good	Average	Over	Over	Average; good	.....	John Blayson, Cotterstock Hall Gardens, Oundle.
NOTTINGHAM- SHIRE	Under; good	Under; good	Under; good	Under; bad	Average; good	Average; good	Average; good	Under; good	Average; good	Thos. Masters, Lower Shuckburgh, Daventry.
	Average; good	Over; very good	Average; good	Under	Average; good	Over; good (protected)	Over; very good	Under	Under; bad	Amos Parr, Holme Pierrepont Hall Gardens, Nottingham.
	Over; good	Over; good	Average	Over; good	Over; good	Average	Over; good	Average; good	Average	James Gibson, Welbeck Gardens, Worksop.
	Under	Over	Over	Under	Average	Over	Over	Under; bad	Under	James B. Allan, Osberton Gardens, Worksop.
	Average	Under	Average; good	Average; good	Average	Average	Average	.....	.....	J. R. Pearson and Sons, Lowdham.
OXFORDSHIRE	Average; good	Average; good	Over; very good	Average	Over; very good	Over; very good	Over; very good	Under	Over; good	A. W. Culloch, Estate Office, Newstead Abbey.
	Under	Under	Over	Average	Over	Over	Over	Average	Under	John A. Hall, Shipplake Court Gardens, Henley-on-Thames.
	Under; poor	Under; bad	Over; good	Average	Average; good	Over; very good	Average; very good	Over; good	Average	A. J. Long, Wyfold Court Gardens, Reading.
SHROPSHIRE	Average; good	Over; good	Over; good	Over; good	Over	Over; good	Over; good	Average; bad	Average	J. Broadfoot, Shotover Park Gardens, Wheatley.
	Over; very good	Average; good	Under; fair	Under; poor	Over; good	Average; good	Average; good	Under; poor	Average; good	A. S. Kemp, Shitnal.
STAFFORDSHIRE ..	Under; bad	Average; bad	Average; good	Average; good	.....	Over; very good	Over; very good	Average; very good	Under	John Taylor, Hardwicke Grange Gardens, near Shrewsbury.
	Average	Under	Under	Under	Average	Average	Over	Under	Under	T. Bannerman, Blithfield Gardens, Rugeley.
WARWICKSHIRE ...	Under; bad	Average; bad	Average; good	Average; good	Average; good	Average; good	Average; good	Average; good	Under	G. Woodgate, Rolleston Hall Gardens, Burton-on-Trent.
										W. Miller, Berkswell.
5, Southern Counties.										
BERKSHIRE	Average; good	Average; good	Over; good	Average; good	Over; good	Over; good	Average; good	Over; good	Average; good	Geoffrey Cooper, Oakley Court Gardens, Windsor.
	Over	Average	Over	Average	Average	Over	Average	Under	Average	J. Howard, Benham Park Gardens, Newbury.
	Under	Under	Average	Under	.....	Over; very good	Average; good	Average; very good	Under	William Fyfe, Lockinge Gardens, Wantage.
	Average	Under	Over	Average	Average	Over	Over	Average	Average	James Coombes, Englefield Gardens, Reading.
DORSETSHIRE	Under	Average; good	Over; good	Average; good	Average; good	.....	Over; very good	Under; good	Under; bad	H. Birkinshaw, Chedington House Gardens, Crewkerne.
	Under; bad	Under	Average	Average	Over	Over; very good	Over; very good	Average	Under	T. Turton, Castle Gardens, Sherborne.
	Under	Under; good	Over; good	Under; good	.....	Average; good	Over; very good	Over; very good	Over	Thos. Denny, Down House Gardens, Blandford.
	Under; bad	Over; very good	Over; good	Average; good	Over; very good	Over; good	Average; good	Average; very good	Under; bad	David C. Fyfe, Kingston House Gardens, Dorchester.
HAMPSHIRE	Under; bad	Average; good	Over; very good	Over; good	Over; good	Average; good	Over; very good	Over; very good	Over	Edwin Molyneux, Swanmore Park, Bishop's Waltham.
	Under	Under; bad	Over; good	Average	Average; good	.....	Over; good	Average; good	Under	C. H. Snook, West Hill Gardens, Shanklin, Isle of Wight.
	Average; good	Under	Average; good	Morellos average; good	.....	Over; very good	Over; very good	Under; good	Over; Wal-	A. G. Nichols, Strathfield-saye Gdns., Mortimer, R.S.O.
	Under	Average	Over; very good	Average; good	.....	Average; good	Average; good	Average	.....	James Wasley, Sherfield Manor Gdns., Basingstoke.
KENT	Average	Average	Over	Average	Average; good	.....	Average; good	Over; good	.....	W. S. F. Sparks, Walmer Place, Walmer.
	Under; good	Under; good	Over; good	Average; bad	Average; good	.....	Average; good	Average; good	Average; good	George Woodward, Barham Court Gardens, Maidstone.
	Under; bad	Average	Over; good	Average	Over	Under	Average; good	Under; bad	Average; good	George Bunyard, Maidstone.
	Under	Over	Over	Average	Over	Over	Over; good	Average; good	Over	Alfred O. Walker, Ulcombe Place, near Maidstone.
	Under	Over; good	Over; good	Under; bad	Over	Average	Average	Over; very good	Under	Wm. Lewis, East Sutton Park Gardens, Maidstone.
	Under	Average; good	Over; good	Average; good	Average; good	.....	Average; good	Average; good	Over; good	Geo. Fennell, Bowden, Hadlow Road, Tonbridge.
	Under; bad	Under; bad	Over	Under	.....	.....	Average; good	Under; good	Over; good	B. Champion, Baron's Place, Mereworth.
	Average; very good	Under; good	Over; very good	Under; good	Average; good	Average; good	Over; very good	Over; good	Average; very good	H. Cannell and Sons, Eynsford.
	Under; bad	Under; bad	Average; good	Average	.....	.....	Under	Average	Under	George Lockyer, Mereworth, Maidstone.
	Over; good	Average; very good	Under; good	Average; good	Over; good	Average; very good	Over; very good	Average; good	.....	W. E. Humphreys, Blendon Hall Gardens, Bexley.
	Average; good	Average; good	Over; good	Over; very good	Average; good	Average; good	Average; good	Average; good	Under; good	W. J. Sims, Betseshanger Gardens, Eastry, S.O.
MIDDLESEX	Over; good	Average; good	Over; good	Average; good	.....	Over; good	Over; very good	Over; good	.....	J. G. Weston, Eastwell Park Gardens, Ashford.
	Average; good	Average; good	Average; good	Average; good	Over; very good	Average; good	Average; good	Average; good	Average	H. Markham, Wrotham Park Gardens, Barnet.
	Average; bad	Under; fair	Over; good	Average; fair	Average; fair	Over; good	Average; good	Average; fair	Average	W. Watson, Harfield Place Gardens, Uxbridge.
	Over; good	Under	Average; good	Average	Over; good	Average	Average; good	Over; good	Average	W. Bates, Cross Deep Gardens, Twickenham.
	Average; good	Under; good	Over; very good	Average; very good	Over; very good	Over; very good	Over; very good	Over; very good	.....	A. R. Allan, Hillingdon Court Gardens, Uxbridge.
	Average; good	Average; good	Over; good	.....	Average; bad	.....	Over; very good	Average	Under	James Hawkes, Osterley Park Gardens, Isleworth.
	Under; bad	Under; bad	Under; bad	Average; good	Over; very good	Over; very good	Over; very good	Over; very good	.....	John Bates, Syon Gardens, Brentford.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
5, Southern Counties.										
SURREY	Average	Average; good	Average	.....	Average; good	.....	Average; good	Average	Average	William Bain, Burford Gardens, Dorking.
	Average	Under	Average	.....	Average	Over	Average	Average	.....	James Lock, Otlands Lodge Gardens, Weybridge.
	Average	Average; good	Over; good	Under	.....	.....	Over; good	Over; good	Under	S. T. Wright, R.H.S. Gardens, Wisley, Ripley.
	Average; good	Average; good	Over; very good	.....	.....	Over; good	Over; very good	Under; good	Average; good	W. P. Bound, Gotton Park Gardens, Reigate.
	Average	Under	Over; very good	Average; good	.....	.....	Average; good	Average; very good	.....	Geo. Jackman and Son, Woking Nurseries.
	Under	Over	Vastly over	.....	Over	.....	Over	Under	.....	W. Wilks (Rev.), Shirley Vicarage, Croydon.
	Under; fair	Average; fair	Over; good	Over; good	Over; good	Over; good	Over; good	Average; fair	.....	Alex. Dean, Richmond Road, Kingston.
	Over	Average	Over	Over	Average	Over	Over	Under	Average	Geo. Kent, Norbury Park Gardens, Dorking.
	Under	Average; good	Over; very good	.....	.....	.....	Average; good	Over; very good	Average; good	Geo. Halsey, Riddings Court Gardens, Caterham Valley.
	Under; bad	Over; good	Over	Over	Average; good	Over; good	Over; good	Average; good	Over	W. H. Honess, Cobham Park Gardens, Cobham.
	Average; good	Over; very good	Over; very good	Over; very good	Over; good	Over; good	Over; very good	Average; very good	Average; good	G. J. Hunt, Ashted Park Gardens, Ipsom.
SUSSEX	Under	Average; good	Over	Average; good	Average; very good	Over; good	Over; good	Under; bad	Average	A. Wilson, Bridge Castle Gardens, Tunbridge Wells.
	Average	Under	Over	Average	Over	.....	Over	Under	Over	W. E. Bear, Hailsham.
	Under	Average	Over; good	Average	Average	.....	Average; good	Under; bad	Average	A. B. Wadds, Paddockhurst Gardens, Worth.
	Under	Average; good	Over; good	Average; good	Average; good	.....	Average; good	Average; fair	Average; good	Alex. Reid, Possingworth Gardens, Cross-in-Hand.
	Under; bad	Average	Over; good	Average; good	Over; good	Average; good	Average; good	Under; bad	.....	W. H. Smith, West Dean Park Gardens, Chichester.
	Under; bad	Over; very good	Over; very good	Over; very good	Average; good	Average; good	Average; good	Average; good	Average; good	Wm. Iremden, Brambletye Gardens, East Grinstead.
	Under; very good	Over; very good	Over; very good	Average; good	Over; very good	Average; good	Over; very good	Under; good	Over; very good	W. J. Lancaster, One Hall Gardens, Burgess Hill.
	Under; bad	Average; good	Average; good	Average; good	Average; good	.....	Average; good	Average; good	Average; good	W. A. Cook, Leonardslee Gardens, Horsham.
	Under	Average; good	Over; good	Under	Over	Over; good	Over; very good	Under; bad	Average	H. C. Pinsep, Buxted Park Gardens.
WILTSHIRE	Under	Average	Average	Under	Over	Over	Over	Average	Average	John Rannerman, Lackham Gardens, Lacock.
	Under; good	Average; good	Under; good	Average; good	Over; very good	Over; very good	Average; good	Over; good	Under; bad	Thomas Challis, Wilton House Gardens, near Salisbury.
	Under; bad	Under; good	Under; bad	Average; good	Average; good	Average; good	Average; very good	Average; very good	.....	George Brown, Bowood Gardens, Calne.
	Under; bad	Average; very good	Over; very good	Average; good	Average; very good	Average; very good	Average; very good	Over; good	Average; good	W. Tinley, Malmesbury.
7, England, N.W.										
CUMBERLAND	Average; good	Average; good	Average; good	Average; very good	Average; good	Over; good	Over; very good	Over; very good	.....	William Scott, Eden Hall Gardens, Langwathby, R.S.O.
	Under	Average; good	Over; very good	Average; good	Average; good	Average	Over; very good	Average; good	.....	Thomas Tunstall, Carlston Hill Gardens, Penrith.
	Under; bad	Under; bad	Average; good	Average; good	.....	Average; good	Average; good	Average; good	.....	F. Clarke, Lowther Castle Gardens, Penrith.
	Over; good	Over; good	Over; very good	Over; very good	.....	Over; very good	Over; very good	Over; very good	.....	J. Coupland, Brougham Hall Gardens, Penrith.
LANCASHIRE	Under; good	Average; good	Under; good	Average; good	Average; good	Under	Average; very good	Under; good	Not grown	E. F. Hazleton, Knowsley Gardens, Prescott.
	Average; good	Average; good	Average; good	Over; good	.....	.....	Over; very good	Over; very good	.....	Wm. Ashton, Wrightington Hall Gardens, Wigan.
	Average	Under	Under	Average; good	.....	.....	Average; good	Under	.....	B. Cromwell, Cleveley Gardens, Allerton, Liverpool.
	Under; good	Average; good	Under; bad	Average; good	Over; very good	.....	Over; good	Average; good	Under	Ben. Ashton, Latham House Gardens, Ormskirk.
	Under; bad	Over; good	Over; good	Over; good	Over; good	.....	Over; good	Average; good	.....	Wm. P. Roberts, Cuerden Hall Gardens, Preston.
	Under; bad	Under; bad	Under; bad	Under; bad	.....	.....	Average; good	Under; bad	Under	Thomas Wyton, Abbeystead Gardens, Lancaster.
WESTMORELAND ..	Under; bad	Under; bad	Under	Average; good	.....	.....	Average; good	Average; good	.....	W. A. Miller, Underley Gardens, Kirkby Lonsdale.
8, England, S.W.										
CORNWALL	Under	Average	.....	Mottellos; under	Average	.....	Over	Over; bad	.....	Archibald Mitchell, Ichady Park, Camborne.
	Under	Average	Average	Over; good	Under	Over; good	Over; very good	Under; bad	Average	A. C. Bartlett, Penarrow Gardens, Walsay.
	Under; good	Under; good	Average; good	Under	Over; very good	Average; good	Over; very good	Average; good	.....	Alfred S. Read, Port Llot Gardens, St. Germans, R.S.O.
	Under; bad	Under; bad	Average; good	Average; good	Average; good	Over; good	Over; very good	Average; bad	.....	W. H. Bennett, Menabilly, Par Station.
DEVONSHIRE	Average	Under; good	Over; good	Average; fair	Over; good	Over; good	Over; good	Average; fair	Average	Andrew Hope, 38, Prospect Park, Exeter.
	Under; good	Average; very good	Over; very good	Average; good	Average; very good	Over; good	Average; very good	Average; very good	Average	James Mayne, Bickton Gardens, East Budleigh.
	Over; good	Average; good	Average; good	Over; good	.....	Under; bad	Over; very good	Average; good	.....	E. L. Bristow, Castle Hill Gardens, South Molton, N. Devon.
	Average	Average	Over	Average	Under	Under	Over	Average; bad	.....	G. Foster, Dawlish Road Gardens, Teignmouth.
	Under	Under	Average	Under	Average	Under	Average	Under	Average	T. H. Slade, Poltimore Gardens, Exeter.
	Under; good	Under; good	Over; good	Average; very good	Over; good	Over; good	Average; very good	Average; good	Average; good	John Coutts, Killerton Gardens, Broadclyst.
	Under; bad	Under; bad	Under	Average	Average	.....	Over; very good	Over; very good	.....	Geo. Baker, Membrand Gardens, near Plymouth.
GLOUCESTERSHIRE	Under	Average	Average	Under	Average	Over; good	Average	Average	Under	William Keen, Bowden Hall Gardens, near Gloucester.
	Under	Average; good	Average; good	Under	Over; good	Over; good	Over; good	Average; good	Under; bad	John Banting, Tortworth Gardens, Falfeld.
	Under; bad	Under	Over; good	Average	Average	Over; good	Over; good	Over; very good	Average	Wm. Nash, Badminton Gardens.
	Average	Over	Average	Average	.....	.....	Over	Average	Under	George Ketteringham, Eyford, Lower Slaughter, R.S.O.
	Under	Under	Over; good	Average; very good	Over; very good	Over; good	Over; very good	Average; good	.....	F. C. Walton, Stanley Park Gardens, Stroud.
	Under	Average	Over	Average; good	Average	Over	Average; good	Over; bad	Average; good	A. Chapman, Westbury House Gardens, Tetbury.
	Under	Under	Average	Average	Average	Over	Average	Over	.....	T. Cooper, Sedbury Park Gardens, Chepstow.
	Average; good	Over; good	Over; good	Over; very good	Over; good	Average; good	Over; good	Over; very good	Average; good	A. E. T. Rogers, Sudeley Castle Gardens, Winchcombe.
	Under	Average	Average	Average	Average; good	Average; good	Over; good	Average; good	Over	W. H. Berry, Higham Court Gardens, Gloucester.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
8, England. S.W.										
HEREFORDSHIRE	Under; good	Under; good	Over; good	Average; good	Over; good	Average; good	Over; very good	Average; fairly good	.....	Thos. Watkins, Newport Hall Gardens, Eardisley.
	Under; bad	Average; good	Over; good	Average; good	Over; good	Over; very good	Over; very good	Average; good	Under	W. E. Hyde, The Holt, Ledbury.
	Under	Under; bad	Average	Average	Average	Average	Average; good	Under	Average; good	W. Powell, Croft Castle Gardens, Kingsland.
	Under	Average; good	Over; good	Under	.....	Average	Over; good	Average; good	Average	Thos. Spencer, Goodrich Court Gardens, Ross.
	Under	Average; good	Over; good	Average; good	Over; good	Average; good	Average; good	Average; bad	Average; good	George Mullins, Eastnor Castle Gardens, Ledbury.
	Under	Under	Average	Average	.....	Under	Over; very good	Average	Under	Chas. Smith, Barton Court Gardens, Colwall.
	Under	Average; very good	Average; good	Average	Average; good	Average	Over; very good	Under; bad	Average	Wm. Humphries, Holme Lacy Gardens, Hereford.
	Average; good	Average; good	Average; good	Under; good	.....	Over	Average; very good	Average	Over	J. Rick, Moraston House Gardens, near Ross.
MONMOUTHSHIRE	Under	Average; good	Average; good	Average	Average; good	Average; good	Over; very good	Over; very good	Average	W. F. Wood, Llanfrehfa Grange Gardens, Caerleon.
	Under; good	Under; good	Under; good	Average; good	Over; good	Over; good	Over; very good	Average; good	Average	Thos. Coomber, The Hendre Gardens, Monmouth.
	Under; bad	Average; good	Average; good	Average	Over; good	Over	Average; good	Average	.....	John Basham, Fair Oak Nurseries, Bassaleg, Newport.
	Under; bad	Average; good	Average	.....	Over; good	Over; good	Over; very good	Average; very good	.....	Jas. Bone, Tredegar Park, Newport, Mon.
	Average	Under	Average; good	Average	Average; very good	Average; very good	Average; very good	Average	.....	Joseph Wiggins, Nevill Hall Lodge, Abergavenny.
SOMERSETSHIRE	Under	Average	Average	Under	Over	Average	Over; good	Over; good	Under	William Hallitt, Cossington, Bridgwater.
	Average; bad	Under; good	Over; good	Over; good	Average; good	Over; good	Over; very good	Over; good	Average; good	Geo. H. Head, Kingsdon Manor Gardens, Taunton.
	Under; good	Under; good	Over; very good	Average; bad	.....	Over; good	Over; good	Under; bad	Under	John Crook, Forde Abbey Gardens, Chard.
	Under	Under	Average	Average	Over	Over	Over	Average	Under	Samuel Kidley, Chipley Park Gardens, Wellington.
WORCESTERSHIRE	Average; very good	Under; very good	very good	Over; good	Over; very good	Over; very good	Over; very good	Average; good	Average	A. Young, Witely Court Gardens, Stourport.
	Under; good	Over; good	Average; good	Average; good	.....	Over; good	Average; good	Under; bad	.....	A. A. Pettigrew, Hewell Gardens, Redditch.
	Under; good	Under; good	Average	Average	.....	Over; good	Average; very good	Under	Average	C. A. Bayford, Davenham Gardens, Malvern.
	Under; good	Over; good	Over; good	Over; good	Over; good	Over; very good	Average; very good	Under; bad	Average; good	William Crump, V.M.H., Madresfield Court Gardens, Malvern.
WALES:										
ANGLESEY	Average; good	Average; good	Under; bad	Average; good	.....	.....	Over; very good	Under; bad	.....	Wm. Pilgrim, Bodorgan Gardens, Anglesey.
CARMARTHENSHIRE	Under; bad	Average; good	Average; good	Average; good	.....	.....	Over; good	Over; good	.....	William Parker, Neuaddfawr Gardens, Llandovery.
	Average; good	Average; bad	Under; good	.....	Average; good	.....	Over; very good	Average; good	.....	A. Richardson, Dynevor Castle Gardens, Llandilo.
CARNARVONSHIRE	Under	Average; good	Under	Average	.....	.....	Over; very good	Under	.....	H. Weaver, Vaynol Park Gardens, Bangor.
	Under; bad	Under; bad	Under; bad	Under; bad	.....	Under	Average; good	Under; bad	.....	W. Speed, Penrhyn Castle, Bangor, N. Wales.
	Average	Under	Average	Under	.....	.....	Over; very good	Under	.....	I. Evans, Gwydyr Castle Gardens, Llanrwst.
DENBIGHSHIRE	Average	Under	Under	Under	Average	Over	Over; good	Under; bad	Average	J. Martin, Bryn Estyn Gardens, Wrexham.
	Average; good	Average; good	Over; good	Average; bad	Average; good	Over; good	Over; very good	Under; good	.....	J. A. Jones, Chirk Castle Gardens, Chirk, Ruabon.
	Average	Average	Average	Over; very good	.....	Under	Over; very good	Average	Average; good	Hy. Forder, West Ruthin Castle, Ruthin.
FLINTSHIRE	Average	Average	Under	Under	Average	Average; good	Average; good	Average	Under	John Forsyth, Hawarden Castle, Chester.
GLAMORGANSHIRE	Under; good	Average; good	Average; good	Under; good	Over; very good	Over; very good	Over; very good	Over; good	Over; good	R. Milner, Margam Park Gardens, Port Talbot.
	Under	Under	Under	Average	Average	.....	Average; very good	Average; good	Under	C. T. Warrington, Penllergaer Gardens, Swansea.
	Average; good	Under; good	Over; very good	Under; bad	Over; very good	Over; very good	Over; very good	Under; bad	.....	Hugh A. Pettigrew, St. Fagan's Castle Gardens, Cardiff.
MERIONETHSHIRE	Average; good	Under; bad	Under; bad	Average; bad	.....	.....	Over; very good	Under; bad	.....	John S. Higgins, Rhŷg Gardens, Corwen.
	Under	Under	Average	Average	.....	.....	Over	Average	.....	R. R.
MONTGOMERYSHIRE	Average; good	Average	Under; bad	Average; good	Over; very good	Over; very good	Over; very good	Under; bad	Under; bad	E. L. Evans, Vaynor Park Gardens, Berwick.
	Under; bad	Average; good	Under; bad	Under; good	Over; good	Over; good	Over; very good	Average; bad	Average; good	John Lambert, Powis Castle Gardens, Welshpool.
PEMBROKESHIRE	Under; bad	Under; bad	Over; average	Average	Under; bad	.....	Average; good	Under; average	Under	Geo. Griffin, Slebeck Park Gardens, Haverfordwest.
	Under; good	Under; good	Average; good	Over; very good	Over; very good	Average; good	Over; very good	Over; very good	Over; good	W. A. Baldwin, Clynewydd Gardens, Boncath, R.S.O.
RADNORSHIRE	Under; good	Average; good	Under; good	Under; good	Over; very good	Over; very good	Over; very good	Average; good	Under	J. MacCormack, Maesllwch Gardens, Glasbury, Hereford.
	Under; very good	Average; good	Average; very good	Average; very good	Average; very good	Over; very good	Over; good	Average; good	Average; good	A. Buckingham, Stanage Park, Brampton Brian.
IRELAND:										
9, Ireland. N.										
DUBLIN	Under	Average; good	Under	Average; good	Over	Average	Average; good	Average; good	Under	A. Campbell, St. Anne's Gardens, Clontarf.
GALWAY	Under	Under; bad	Under; bad	Average; good	.....	.....	Over; good	Over; very good	.....	Thomas Dunne, Lough Cutra Castle Gardens, Gort.
MAYO	Under	Average	Under	Average	Under	.....	Over	Over	Under	Patrick Connolly, Cranmore, Ballinrobe.
MEATH	Under; good	Under	Over; good	Under	.....	.....	Average	Average	.....	Michael McKeown, Julians-town, Drogheda.
	Under; bad	Average	Under	Over; very good	Over; very good	Over; very good	.....	Over; very good	.....	S. B. T.
TYRONE	Under	Average; good	Over	Average; good	.....	.....	Over; very good	Under; bad	.....	Fred. W. Walker, Sion House Gardens, Sion Mills.
	Under	Under	Under	Average	.....	.....	Over; very good	Average; bad	Under	James Small, Caledon Park Gardens, Caledon.
WEST MEATH	Under	Over; good	Average	Average	.....	Over; good	Over; good	Average; good	Under	George Bogie, Pakenham Hall Gardens, Castlepollard.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
10, Ireland, S.										
ATHLONE	Average	Under	Under	Average; good	Over; very good	.....	Over; good	Over; very good	Under	J. Murray, Moydrum Castle Gardens.
CARLOW	Average; good	Over; very good	Over; good	Average; good	Under; bad	Average; good	Over; very good	Over; good	Average; good	F. F. Browne, Borris House Gardens, Borris.
CLARE	Under; bad	Under; bad	Under; bad	Average; good	Average; good	.....	Average; very good	Average; bad	.....	Alfred Barker, Carrigoran, Newmarket-on-Fergus.
CORK	Under	Under	Average	Average	Under	.....	Average	Under	.....	Head Gardener, Aherna, Conna.
	Under; very good	Under; good	Under; good	Under; bad	Under; bad	Under; good	Average; very good	Average; good	Bad	C. Price, Mitchelstown Castle Gardens.
	Under; bad	Average	Average; good	Average; good	Over; very good	.....	Over; very good	Average; good	.....	W. J. Keywood, Castle Bernard, Bandon.
KILDARE	Average	Average	Average	Average	Average	Over	Average	Under	.....	Frederick Bedford, Straffan House Gardens, Straffan Station.
	Under	Under	Under	Average; good	Over	Over	Over	Under	Under	A. Black, Carton, Maynooth.
ROSCOMMON	Average	Average	Under	Average; good	Average	.....	Over; good	Under	.....	Terence Rogers, Frenchpark House Gardens.
	Under	Under	Under	Average	Average	Average	Over; very good	Over; very good	Under	Edward Connor, Mote Park Gardens.
WATERFORD	Under	Under	Over; good	Under	Average; good	Under; bad	Average; good	Under; bad	.....	David Crombie, Curriglan Gardens, Portlaw.
WICKLOW	Average	Under	Average; good	Under; bad	.....	Under; bad	Over; good	Average; good	Under	William Owen, Powerscourt Gardens, Enniskerry.
CHANNEL ISLANDS:										
GUERNSEY	Average good	Average; good	Average	Average	Average	.....	Over; good	Over; good	.....	Chas. Smith and Son, Caledonia Nursery.
JERSEY	Average	Under	Under	Average; good	Average; good	Under	Over; very good	Average	Average	T. Sharman, St. Mark's Road, St. Helier's.
	Average; good	Under; good	Over; very good	Average; good	Over; very good	Over; very good	Over; very good	Under; good	.....	Philip Le Cornu, The Jersey Nurseries, Jersey.
ISLE-OF-MAN:										
	Average; good	Over; good	Average	Average	.....	.....	Average	Under; bad	.....	James Inglis, Brunswick Road Nurseries, Douglas.
	Under; very good	Under; good	Under; bad	Under; bad	Average; good	Under; bad	Over; very good	Average; very good	.....	E. B.

SUMMARY.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
SCOTLAND.									
Number of Records ..	(46)	(44)	(44)	(44)	(18)	(18)	(46)	(46)	(8)
Average	16	11	22	24	9	9	21	28	2
Over	4	1	10	10	3	5	22	10	6
Under	26	32	12	10	6	4	3	8	6
ENGLAND.									
Number of Records ..	(187)	(186)	(186)	(179)	(143)	(146)	(187)	(186)	(124)
Average	54	91	67	115	74	50	75	101	62
Over	11	24	92	24	64	84	108	32	14
Under	122	71	27	40	5	12	4	53	50
WALES.									
Number of Records ..	(21)	(21)	(21)	(19)	(13)	(12)	(21)	(20)	(11)
Average	10	12	7	10	6	2	4	8	4
Over	0	0	3	2	5	8	17	3	2
Under	11	9	11	7	2	2	0	9	2
IRELAND.									
Number of Records ..	(20)	(20)	(20)	(20)	(14)	(10)	(19)	(20)	(9)
Average	5	7	5	15	5	3	7	8	1
Over	0	2	4	1	5	4	12	6	0
Under	15	11	11	4	4	3	0	6	8
CHANNEL ISLANDS.									
Number of Records ..	(3)	(3)	(3)	(3)	(3)	(2)	(3)	(3)	(1)
Average	3	1	1	3	2	0	0	1	1
Over	0	0	1	0	1	1	3	1	0
Under	0	2	1	0	0	1	0	1	0
ISLE OF MAN.									
Number of Records ..	(2)	(2)	(2)	(2)	(1)	(1)	(2)	(2)	—
Average	1	0	1	1	1	0	1	1	—
Over	0	1	0	0	0	0	1	0	—
Under	1	1	1	1	0	1	0	1	—

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the **PUBLISHER, 41, Wellington Street, Covent Garden, W.C.**

Letters for Publication, as well as specimens and plants for naming, should be addressed to the **EDITOR, 41, Wellington Street, Covent Garden, London.** Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR AUGUST.

SATURDAY, AUGUST 3—
Soc. Franc. d'Hort. de Londres meet.
German Gard. Soc. meet.

MONDAY, AUGUST 5—
Bank Holiday.
Ramsey Fl. Sh.

TUESDAY, AUGUST 6—
Roy. Hort. Soc. Coms. meet.
Scottish Hort. Assoc. meet.
Nat. Amateur Gard. Assoc. meet.
Leicester Abbey Park Fl. Sh. (2 days).

THURSDAY, AUGUST 8—
Midland Carnation Sh. in Birmingham Botanic Gardens (2 days).
Swansea Fl. Sh.

FRIDAY, AUGUST 9—
Wellington (Som.) and District Fl. Sh.

SATURDAY, AUGUST 10—
Ann. meet. Roy. Botanic Soc., 1 p.m.

TUESDAY, AUGUST 13—Exmouth Fl. Sh. (2 days).

WEDNESDAY, AUGUST 14—
Taunton Deane Fl. Sh. (2 days).

SATURDAY, AUGUST 17—
Sheffield Fl. Sh.
German Gard. Soc. meet.

TUESDAY, AUGUST 20—
Roy. Hort. Soc. Coms. meet.
Brighton Fl. Sh. (2 days).
Brit. Gard. Assoc. Ex. Council meet.

WEDNESDAY, AUGUST 21—
Shropshire Hort. Soc. Sh. at Shrewsbury (2 days).
Charlton Kings Fl. Sh.

THURSDAY, AUGUST 22—Aberdeen Fl. Sh. (3 days)

FRIDAY, AUGUST 23—
Roy. Bot. Soc. meet.
Rose Sh. in Manchester Botanic Gdns.

FRIDAY, AUGUST 30—East Kilbride Fl. Sh.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—62.4

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, July 31 (6 P.M.): Max. 66°; Min. 50°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, August 1 (10 A.M.): Bar. 30.0; Temp., 62°; Weather—Bright sunshine.

PROVINCES.—Wednesday, July 31 (6 P.M.): Max. 62°; Cambridge; Min. 51°; Scotland, N.E.

The Fruit Crops.

In presenting our annual report on the condition of the hardy fruit crops it is satisfactory to be able to state that the crops are not likely to be less than the average, or inferior to those obtained last season. The weather since April has been so unseasonable, and the temperature of the atmosphere so much below that which is normal, it would not have been surprising had the return proved of a somewhat depressing character. It is partly for these reasons that we regard the present crops as satisfactory. The weather will always continue the determining factor in the cultivation of hardy fruits, and it is to some condition of the weather at a particular time that success or failure may generally be attributed. The cultivator can do much to

deserve success, by exercising care in the selection of a proper situation for the trees, by thoroughly preparing the soil before the work of planting is commenced, by carefully determining the most suitable varieties for particular districts, seeing that such trees are purchased as have been grafted on to the best stocks, and that skilful management is brought to bear on the trees. He can employ means for preserving the trees from insect and fungus attacks, and in some cases, but not all, it is within his power to afford artificial waterings during periods of drought, and manures to soils known to be deficient in plant foods. But after all has been done that is possible in our present state of knowledge, the cultivator cannot command success. This most desirable result can only be achieved after the gardener has done his part skilfully and faithfully, and the conditions of the weather during critical periods in the development of the trees are favourable. Thus it is that on occasions such as this our thoughts are taken back to the spring of the year, and we recall the condition of the trees at the stage when the buds were beginning to burst, and the brightest hopes were entertained in respect to the future crops. At that particular time this season the fruit trees were, in the words of many of our correspondents, "full of promise." The month of September in last year was remarkable for high atmospheric temperatures and brilliant sunshine, conditions which may have had something to do with the production of a rich supply of flower buds on the trees. The observations to be published in subsequent issues, and furnished by contributors to the report, are almost unanimous in stating that the trees blossomed with great freedom. Only one or two reporters state that owing to the production of heavy crops last year the trees failed to flower this season so well as could have been desired.

We think that it is the case also that fewer blossoms were destroyed by late frosts than is often the case in this country, and that the comparative failure of the Apple crop is attributable to low atmospheric temperatures, and cold winds, which prevailed for long periods together, and to the extraordinary lack of sunshine experienced during the months of May and June. But if these conditions have brought about a deficient Apple crop, they have not so greatly affected Pears, whilst Plums are much above an average crop.

If we consider the crops in detail we find that, concerning the Apple crop in Scotland,

out of forty-six returns, twenty-six report the crop as being under the average, whilst sixteen report average crops, and in only four cases are they described as more than average. In England, out of 187 returns, there are 122 reported under the average, whilst only sixty-five report crops up to, or above, the average. In Wales eleven correspondents report that the crop is under the average, and in not a single case is it described as more than average. In Ireland the conditions are worse than in England, Scotland, or Wales, for out of twenty returns there are fifteen which report the crop as under the average.

The Apple crop, therefore, over all the country is of less value than last year, and readers may see this for themselves by comparing the grand summary for the present season with that for 1906, which we have reproduced for this purpose.

Pears are variable, being less scarce in England than they were last year, but not so in Scotland. Out of forty-four returns from Scotland, thirty-two report the crop as under the average, and in only one instance is it reported as above the average. In England, among 186 returns there are seventy-one under average, and the rest all report the crop as average or above average. In Wales nine out of twenty-one reporters, and in Ireland eleven out of the same number, state the crop to be under the average.

Plums are much more abundant than usual in most parts of England, and in Scotland, but the crop in Wales and Ireland is not so plentiful. Out of forty-four returns from Scotland only twelve report the crop as being under the average, whilst in thirty-two instances it is described as equal to, or above, the average. In England, out of 186 returns, ninety-two report the crop as being above the average, sixty-seven as equal to the average, and only twenty-seven as deficient.

Cherries are a good crop in most parts of the country, being much above the average, and the same remark applies with even greater force to Peaches and Apricots. The soft fruits, such as Gooseberries, Currants, and Raspberries, grouped together under the term "small" fruits, appear less liable to miss cropping than Apples, Plums, or Pears, and reference to the returns published in these pages for some years past will show that, as a rule, the crops of small fruits have been good. But this year they are certainly above the average, for in England, out of 187 returns, all but four report average crops or crops above the average. The returns in respect to Strawberries appear fairly satisfactory in the report, but we are afraid that

GRAND SUMMARY, 1907.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	(279)	(276)	(276)	(267)	(192)	(189)	(278)	(277)	(155)
Average ...	89	122	105	163	98	62	106	144	68
Over ...	15	24	108	37	78	101	165	56	18
Under ...	175	126	63	67	16	26	7	77	69

SUMMARY OF 1906 FOR COMPARISON.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	(253)	(249)	(228)	(229)	(161)	(147)	(253)	(258)	(131)
Average ...	109	36	20	86	70	30	152	165	61
Over ...	40	7	1	12	6	8	55	54	10
Under ...	104	206	207	131	85	109	46	34	60



NEW SWEET PEAS WHICH RECEIVED AWARDS OF MERIT AT THE NATIONAL
SWEET PEA SOCIETY'S SHOW ON JULY 16, 1907.

the crop generally was not equal to the average, although it lasted for a longer period than usual. Owing to the lack of sunshine the earlier fruits ripened but very slowly, and many decayed during the process. At the best, the fruits were of inferior flavour.

Reviewing, therefore, the details to which we have just referred, and bearing in mind that Apricots, Peaches, Cherries, Plums, Raspberries, Gooseberries, and Currants are plentiful crops, also that Pears are less scarce than they were last year, the fruit crops of 1907 cannot fairly be described as unsatisfactory, notwithstanding that the most important crop, that of Apples, is below the average. Full crops of all kinds of hardy fruits cannot be reasonably expected in any season, for they are seldom, if ever, obtainable.

We thank our correspondents for the information so freely accorded; in most instances it has been contributed by cultivators who have reported on the subject for many years past, and who are therefore the best able to furnish comparative estimates.

OUR SUPPLEMENTARY ILLUSTRATION.—In our issue for July 20 a supplementary illustration was given of a scene in the gardens attached to the Villa d' Este, near Rome, and an account of these gardens was contributed by Mr. JAMES HUDSON, gardener to Mr. Leopold de Rothschild, at Gunnersbury House, Acton. The supplementary illustration to the present issue affords another view in the same gardens, with the Villa showing in the background. Mr. HUDSON describes the gardens as capable of affording a delightful retreat during the hot, dry, Italian summer, and this may well be imagined when viewing the illustration of the series of water-terraces, that are fed by the cascade seen in the background. The Villa itself is said to be one of the finest examples of architecture of the Renaissance period.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the committees will be held in the Society's hall, Vincent Square, Westminster, on Tuesday, August 6. At the afternoon meeting a lecture on Water Lilies will be delivered by Mr. ARTHUR BEDFORD.

SIR JOSEPH HOOKER AND THE ROYAL HORTICULTURAL SOCIETY.—The following letter from Sir JOSEPH HOOKER, O.M., to Sir TREVOR LAWRENCE, in reply to the congratulations of the Royal Horticultural Society on the occasion of his 90th birthday, appeared in the *Times* for July 29:—"The Camp, Sunningdale, July 15, 1907. My dear Sir Trevor,—Your letter of the 25th June conveying the hearty congratulations of the President, Council, and Fellows of the Royal Horticultural Society on the approach of my 90th birthday has gratified me more than I can express. It is not by many times the first instance I have experienced of the friendly and all too liberal estimate of my labours in the cause of horticulture that the society has entertained. It has been a source of great regret that I was obliged, when resigning my post of chairman of the Scientific Committee, to abandon all hope of attending our meetings on account of having to devote my energies to the Directorship of Kew, and to the completion of labours on botanical works I have in progress. I had also to endeavour to overtake arrears of work extending over many years, which are still far from being overtaken. As a botanist I have hereby lost much, for since the days of David Douglas, the Royal Horticultural Society has contributed more for botanical science, as repre-

sented by collections, publications, and experimental research, than any other establishment in Europe. I have now to request you as their president to accept yourself, and convey to the council and to my fellow-members, my pride and gratitude for this most welcome evidence of their friendship and esteem. With every good wish for the continued welfare and renown of the society,—Believe me, dear Sir Trevor, sincerely yours, JOS. D. HOOKER."

GERMAN NURSERYMEN'S ASSOCIATION.—About a year ago the project of the formation of a confederation of nurserymen was brought forward by the Hon. H. MÜLLER, nurseryman at Langsur, and president of the Club of Rhenish nurserymen. Since that time the representatives of the nursery interests have not been allowed to rest, but it has been repeatedly referred to in the German horticultural Press, and the views of the Hon. MÜLLER, and other nurserymen, have been made public with the result that the project has taken a definite shape, and at the Mannheim exhibition, where many members of the trade were present, it was decided to form an association with the Hon. MÜLLER as president; a statement of the proceedings will shortly be published. The next meeting will take place at Eisenach in 1908. The matters that will be the first to be discussed are railway tariffs for the dispatch of nursery productions; means by which business expenditure, in view of the rise in wages, can best be reduced; tax on imports; unity in prices for certain plants, and their size and form, as for example Roses, avenue trees, ornamental shrubs, &c.; and the existing stocks of these. The principle of the "Open Door" will also come under discussion, and on this point the views expressed in general are that there should be no hindrances as regards the trade in nursery stock as between one province and another in the Empire. But the foreigner should be taxed. Then there will be discussions concerning circuit, communal, provincial and school nurseries, and the injury to the trade which results from their competition. These are the more important matters for discussion at next year's meeting.

THE QUARTERLY JOURNAL OF FORESTRY.—In the last issue of this excellent publication, edited by Mr. W. R. FISHER, and published in July, there is a very informative and illustrated article on the life history of the Beech. Other articles include one recommending the conversion of underwood into high forest, and one on the mismanagement of Quick-Fences in England. Dr. SOMERVILLE has an article on the caterpillars of *Argyresthia lævigatella* attacking Larch trees, with illustrations. A report of a lecture delivered by Dr. A. HENRY to the Ashmolean Natural History Society, at Oxford, gives an interesting account of Dr. HENRY's recent tour in the forests of the Rocky Mountains, Spain, Corsica, and Algeria.

CYTISUS ALBUS (LINK).—This is one of the more promising species of *Cytisus* for forcing, and it is occasionally quoted in lists of hardy shrubs. Not by any means a newly introduced plant, it is rare in gardens, and is generally confounded with *C. præcox*, which is equally good for forcing; and there is the risk of confounding it with *C. albus* [Hacquet], of which one form is known in nurseries as *C. Shipkænsis*. *C. albus* [Link] belongs botanically, as well as *C. præcox* and *C. purgans*, to the sub-genus *Spartocytisus*, and reminds one in outward appearance, in the slender rod-like shoots of dull green colour, of *Spartium scoparium* and *Genista Andreana*. The shrub is of an evergreen or half-evergreen character, and the flowers are of the size and form of those of *G. Andreana*, and other small-flowered species, the colour white. It comes into bloom at the same time as *C. purpureus*—

i.e., in early June, and reaches a height of 4½ feet. As a standard worked on the *Laburnum* stock it has an excellent effect. The plant is a native of South-west Europe and Northern Africa, as is evident from the name, *Genet blanc du Portugal*, given to it in French lists. *Thalacker's Handelsgartner*.

VIOLA TRIALS.—Under the auspices of the Scottish Pansy and Viola Association, and with the co-operation of Mr. WHITTON, superintendent of the Glasgow parks, an extensive trial of Violas is being made in the Queen's Park, Glasgow. They are grown by Mr. McIVER, who has charge of this beautiful park. The object aimed at is to find out which kinds are best suited for bedding purposes. Six plants of each variety to be grown were sent from cultivators in different parts of the country, there being about 40 to 50 lots of each of the leading colours. On July 24 they were inspected by four judges, under the guidance of Mr. MILNE, president, and Mr. SMELLIE, secretary of the Scottish Pansy and Viola Association. The following varieties were placed in the order of merit as follows, the first-named variety receiving the greatest number of marks:—*White varieties*.—Christiana, Alexandra, and Bethea, equal (24 marks each), Marchioness, Countess of Hopetoun, and E. C. Barlow (20 marks each), Blanche (16), and Niphetos (4 marks). *Yellow varieties*.—Red Braes (32), King Cup (20), Grievii, Canary, and Meteor (16 each). *Lavender selfs*.—Kitty Bell and Lavender Queen (24 each), Florizel (20). *Blue varieties*.—Wm. Haig (28), Blue Bedder and Mary McLean (20 each), Max Kobb and Royal Scott (16 each). *Striped and Fancies*.—Maggie Currie (28), Jenny McGregor, Dr. McFarlane, and T. W. R. Johnstone (24 each), J. H. Watson (20). *Edge varieties*.—James Pilling (32), Willie Farmer and Mrs. Chichester (24 each). In the evening the society met in the Religious Institution Rooms, Buchanan Street, Glasgow, when a goodly number of promising seedling blooms were presented for inspection. The following fancy Pansies were awarded First-Class Certificates, viz.:—Wm. Cuthbertson, Mrs. S. Mitchell, Arthur Brown, and Jenny Morris. Certificates of Merit were also awarded to several other varieties of Pansy and Viola.

THE GARDEN CHARITIES.—We are informed that the Gardeners' Royal Benevolent Institution and the Royal Gardeners' Orphan Fund have recently received substantial sums of money from Mr. FRANK CRISP, LL.B., J.P., being part proceeds of fees received for admission to view his interesting gardens at Friar Park, Henley-on-Thames. It is very pleasant to record such instances as this, and we commend Mr. CRISP's example as one worthy of more general imitation.

HORTICULTURE AT READING.—That horticultural activity is one of the distinguishing characteristics of Reading is well known to most of our readers. The fact is illustrated very plainly in the issue of the *Reading Standard* for July 27, which contains reports of the visit of the Reading Gardeners' Association to Welbeck Abbey, the residence of the Duke of PORTLAND, on July 17, and of the visit of the National Sweet Pea Society to Reading on July 26. In connection with the Reading Society's visit to Welbeck there are several photographs of the party, and separate portraits of Mr. W. TURNHAM, chairman of the association, Mr. F. W. MACDONALD, treasurer, and Mr. H. G. COX, secretary. The visit of the Sweet Pea Society is marked by the reproduction of two photographs of the visitors, one of which shows the members in the act of inspecting the trials. There is also a portrait of Mr. CHARLES FOSTER, Assistant Director of the Horticultural Department, Reading College, under whose superintendence the trials have been cultivated.

A VETERAN GARDENER.—On July 23 last Mr. ROBERT ANDERSON completed his 80th year of age, and also 44 years' service as head gardener at Sewerby House, near Bridlington, East Yorkshire. Born in Banffshire he has served in many famous gardens, including those at Haddo House, Aberdeenshire, and Trentham, in Staffordshire. On his 36th birthday he went to Sewerby House as head gardener, where he still remains active and well. Mr. ANDERSON raised the beautiful *Tacsonia* × *Andersonii* (see *Gardeners' Chronicle*, August 7, 1875, p. 167). Of his five sons three have followed the gardening profession, two having commenced business on their own account, and one is in the United States of America.

KEW GARDENERS AT CRICKET.—The annual cricket match between past and present Kew gardeners was played at Kew on July 27, and resulted in a win for the present men by 63 runs.

"NOS ARBRES."—A book has been issued in Geneva and Paris by M. H. CORREVON, President of the Société pour la Protection des Plantes. He pleads for the preservation of fine native and exotic trees. The work is well written and in part admirably illustrated. The first portion is concerned with historical trees, the forests, the story of disforestation and afforestation in Switzerland and adjacent countries; the second part treats of the trees of the woods, parks and avenues of Switzerland.

Publications Received.—Board of Agriculture and Fisheries. Report on the Prospects of Crops.—*The Book on Water-Gardening*, by Peter Bisset, published by the A. T. De La Mare Printing and Publishing Company, Ltd., New York.—*Tourist Guide to the Continent*, published by the Great Eastern Railway Company, price 6d.—*Staffordshire County Council Education Committee*. Directory for Higher Education 1907-1908, containing the regulations of the committee and details of schemes in operation throughout the administrative county.—*Journal of the Royal Horticultural Society*, Vol. xxxii., June, 1907.

MARKET GARDENING.

CROPS IN THE WORTHING DISTRICT.

THE season for most crops is quite a fortnight later than the average. The prospects for Chrysanthemums are good. A stock of the variety *Souvenir du Petit Ami* that came under my inspection was remarkably fine. One of the large growers, Mr. F. E. Sparkes, has 80,000 of these plants under cultivation, and another market nurseryman, Mr. Dorey, Sea View Nurseries, has 20,000 plants. In both instances the owners were satisfied with the appearance of their plants.

Tomatos promise a late crop, especially those grown in unheated houses. The system of culture generally adopted is to level the beds in which Cucumbers have been grown and to plant the Tomatos in soil of a very little depth upon a hard bottom. One large nurseryman, Mr. W. Magness, plants the variety *Tuckwood Favourite* for a main crop. Bright sunshine is especially welcome to Tomato-growers, for the fruits sell cheaply, and the returns do not allow of expenses for fuel.

Grapes are the staple crop of the district. Mr. T. Blissett has a very regular crop of *Gros Maroc*, each vine averaging 20 bunches. *Black Alicante* is a very level crop. In four establishments I visited some of the vines were trained as double, and others as single rods; in each instance they were doing well. Mr. W. Magness, of West Worthing, has a span-roofed vinery 450 feet long, from which he obtained 8,000 lb. of Grapes last season, and the present crop promises to be equally as heavy.

Early, mid-season, and late crops of *Gros Colmar* were, without exceptions, good. The variety *Muscat of Alexandria* is largely grown in

the Worthing district, and both the early and the mid-season crops (very few late ones are grown) were promising.

In the houses in which Grapes will shortly be cut, the foliage was being tied back, in order

Peaches are being supplanted by vines, for in more than one house this season vines have been planted in their stead. I noticed a very heavy crop of Peaches in one nursery. The fruits are sent to the Midlands, where they are realised.



FIG. 35.—ROSE HUGO ROLLER, A NEW TFA VARIETY WITH CREAM-COLOURED PETALS, THE OUTER ONES WITH A DEEP SUFFUSION OF CRIMSON. (See page 76 ante.)

that more light might be admitted to the berries. Copious waterings and heavy feeding are practised by all the growers both in the case of inside borders and those outside.

ing from 1s. to 2s. per dozen—a poor return, but one which, the grower informed me, pays. Peach houses are used for Chrysanthemum culture later in the season. Stephen Castle.

THE ROSARY.

CULTURAL NOTES FOR AUGUST.

THE first blooms of the early-flowering varieties are nearly over, and now is a suitable time to remove all weak and badly-ripened shoots. Seed capsules and untidy flowers of Tea and Hybrid Tea varieties should be removed, and the flowering stems be pruned back two buds from the base. Any rampant-growing shoots should also be shortened, for, if this is done early in the present month, a free and continuous display of bloom may be expected. All plants in an active condition of growth should be given copious applications of liquid manure, alternated occasionally with a sprinkling, on the loosened surface of the ground, of

now be made in budding the Manettii and De la Grifferie stocks. The latter are specially suited as stocks for strong-growing varieties of the Rambler type, and climbing Noisettes and Tea varieties, such as W. A. Richardson, Lamarque, Ophirie, Aimee Vibert, Cheshunt Hybrid, and Kaiserin Frederic. The Manetti stock is most suitable for the Hybrid Perpetual type of Roses. Hybrid Tea varieties are really more perpetual in flowering than the former, and they deserve to be more extensively cultivated than at present. Insert the buds as low down on the stem as is possible, and even remove some of the soil just above the roots to allow of this being done. If any buds that were inserted early this season have failed to grow, insert others to take their places as near to the main stem as is possible.

increasing new and desirable varieties among the Hybrid Perpetuals or other strong-growing kinds that lend themselves to this mode of propagation. Choose the best-ripened shoots from among those springing from near the soil, and at about 1 foot or more distant from the main stem. Cut a slit or notch, about one inch long, half-way through on the under side of the shoot. Remove about six inches of the soil so as to cover the shoots, and mix some sandy grit and burnt earth with the excavated mould. Place the shoot carefully, and without breaking it, in the hole, and cover the cut portion with soil, after first making the shoot firm with a hooked peg or iron pin inserted just above the notch. Level the soil and make it quite firm about the shoot. If dry weather prevails, afford copious waterings and well mulch the surface of the ground. Pot-plants and grafted Roses, and those on their own roots that were stopped for the last time as directed in July, will now be ripening their growths previous to their season of flowering, which extends from September onwards. J. D. G.



[Photograph by C. Jones.]

FIG. 36.—CURRANT WHITE DUTCH.

THE WHITE CURRANT.

THE White Currant ranks amongst the best of hardy bush fruits for dessert purposes, and although its flavour and general eating qualities are far superior to those of the Red Currant, it is merely an albino form of the same species—*Ribes rubrum*. It is quite distinct, however, from the Black Currant, for this is derived from *Ribes nigrum*, and the Currants of the grocer are simply a small species of Grape. The White Currant is seldom eaten in a cooked condition, but for the dessert table they form a choice dish, and sometimes the choicer bunches of the Red Currant are mingled on the same dish as the White, the two forming a pleasing effect. The White Currant is the least hardy of the three types, but given a favourable soil and situation it is not difficult of culture if treated according to the general principles of training, pruning, &c., afforded the Red. The best mode of propagation is by means of cuttings, and these should be inserted in the autumn when the young shoots are mature, but they will form roots if inserted any time before March of the following year, although a season is saved if they are rooted by early autumn propagation. The standard variety and the one most often met with in gardens is White Dutch (see fig. 36), and this has numerous synonyms, being known as Blanche d'Hollande, New White Dutch, Jeeve's White, Morgan's White, White Crystal, White Leghorn, &c. Of late years a new variety of much merit, known as Transparent, or Versailles, has been extensively planted. Other varieties are Wilmot's Large White, Blanc de Boulogne, and Yellow German.

COLONIAL NOTE.

WATSONIA ARDERNEI.

YOUR correspondent, F. W. G., complains (p. 373) of the non-success which followed his treatment of the bulbs of *W. Ardernei*. Here, living in the midst of these beautiful bulbs, we find that the best flowers are always obtained from bulbs that are not shifted during their dormant stage. It is also a mistake to allow the bulbs to become thoroughly dried; it is far better to keep the soil somewhat moist, and to grow them undisturbed in the ground instead of in pots. In their natural habitat they flourish in very wet situations, starting into life in winter and blossoming in spring. It will also be found that when the bulbs are left undisturbed in the ground, they will rapidly increase in numbers, and produce stronger growths and blossoms than otherwise. This *Watsonia* is one of the hardiest species, and it resents being coddled. E. P., Cape Town.

Clay's Fertiliser. In dry seasons there is often a difficulty in conveying moisture to the roots in a sufficient quantity by surface waterings. To ensure water reaching the roots, make holes in the soil with pointed iron rods deep enough to allow the water to penetrate to the roots. This system will prevent the roots growing too near to the surface of the soil, and thus becoming, unless well covered with a mulching, scorched by the sun. As soon as the buds on the early-worked stocks commence to swell, the material used for tying should be loosened, and the shoots on the briar pruned back a few inches. Buds being now plentiful and in the best condition for inserting, the opportunity should be taken of performing any budding that is needed. A start may

The present is a suitable time for inserting cuttings of Roses. Select for the purpose short-jointed sideshoots, taken off with a heel, and insert them singly in small, well-drained pots filled with sandy loam, and covered on the surface with a little pure sand. Water the cuttings after they have been inserted, and keep them shaded whenever necessary. Stand the pots in a cold frame and shut the frame close. Some of the cuttings will form roots during the autumn, but if the frame be placed on a hot-bed of moderate heat and the pots be plunged, all the cuttings should form roots and become established before the winter arrives.

Ply the hoe to free the borders and the beds from weeds. July is the best month for layering Roses, a simple and sure method of

TREES AND SHRUBS.

OLEARIA NITIDA.

THIS species was introduced from New Zealand in 1886. Though an extremely handsome flowering shrub, it is, curiously enough, rarely seen in gardens, although such species as *O. Haastii*, *O. stellulata*, often misnamed *O. Gunnii*, and *O. macrodonta*, are fairly common. In New Zealand it is said to reach the size of a small tree, and to grow at an elevation of 4,000 feet. It is probably as hardy as *O. Haastii*, which is found at the same elevation, and harder than *O. stellulata*, but, the number of plants grown in the open in this country being limited, this is, at present, rather a matter of conjecture. The specimen illustrated at fig. 37 is 5 feet 6 inches in height, and it endured 10° of frost on four nights in the last winter, but not a leaf or shoot was injured. As will be seen, it is an attractive object when in full bloom. The small, white, Hawthorn-like blossoms are about half an inch across, and are borne so freely on loose, branching racemes, that, as is shown in the illustration, they entirely hide the foliage. The leaves are leathery in texture, 3 inches in length and 2 inches in breadth, deep green on the upper surface, and silvery white beneath. The flowers were borne in such profusion on the plant illustrated that when the withered bloom-clusters were cut off, they completely filled two bushel baskets. *S. W. Fitzherbert, South Devon.*

CHOICE SHRUBS AT LEONARDSLEE GARDENS.

ONE of the most beautiful shrubs in flower at the present time is *Styrax japonica*. The flowers hang like Snowdrops from the underside of the branches, which are covered with thousands of the pretty white blossoms. This specimen is about 20 feet high, and there is another, not quite so large, planted in a cold, heavy soil, where it is flowering grandly. These trees are given no protection whatever, and they need no pruning. *Stuartia pseudo-camellia* is just now one mass of flowers, which resemble those of a single *Camellia*. They are pure white, with yellow anthers, and measure about 3 inches in diameter. This plant also grows well in a heavy soil.

Cytisus nigricans is a lovely variety of Broom, with a somewhat bushy habit. It grows and flowers with freedom. The specific name is derived from the black colour of the flowers when they are dried.

Cistus ladaniferus is now a fine feature in these gardens. It is one of the best of all the Rock Roses, is perfectly hardy, and very floriferous.

Chionanthus retusus is covered with its fringe-like flowers in white and drooping racemes. The plant is hardy and does well in a cold soil.

Caesalpinia japonica is an interesting plant, with canary-yellow-coloured flowers produced in racemes, somewhat after the manner of a small *Acacia*. The plant requires a liberal treatment in order that it may succeed. The wood has long prickles, which are turned the reverse way of the growing plant. *W. A. Cook, Leonardslee Gardens, Horsham, Sussex.*

PLANT NOTE.

POLEMONIUM CONFERTUM MELITUM.

THIS exceedingly pretty plant, a native of the Rocky Mountains, is very useful for culture as a pot plant in a cool greenhouse. The long, narrow, rich-green, pinnate leaves give a grand effect to the dainty, fragrant, creamy-white flowers, which are borne in terminal axillary racemes on stems 10 inches in height. It should be planted out-of-doors in deep, sandy soil, and be watered freely during hot, dry weather. A suitable soil for its culture in pots is one composed of equal parts rich loam and sand. The plant needs to be freely watered in dry weather. *W. Glover, Langport.*

NURSERY NOTES.

MESSRS. H. CANNELL & SONS.

ON the occasion of a recent visit, the day being stormy and unfavourable for viewing the outdoor plantations at Eynsford and the adjacent orchards and fruit gardens, I had to be content with an inspection of the glasshouses at the Swanley branch. The first one entered was filled mainly with *Gloxinias*, then past their best and in process of maturing and seed setting. The plants were large, with very robust leaves quite concealing the pots. Some possessed blooms 3 or 4 inches in diameter. One new

of the beautiful colours and large size of the blooms, more especially the varieties *cinnabarina*, *aurantiaca* (an orange-scarlet), *alba*, *rosea*, *violacea*, *delicata*, *rosea*, and the peculiarly coloured *salmonea*. These plants bloom early, and are almost continuously in flower. The height of the plants is 1½ to 1¾ feet, and the habit of growth bushy. Of *Streptocarpus*, many were noted carrying immense numbers of blooms of various colours and markings, rivalling the finer *Gloxinias*.

In the *Canna* house my attention was arrested by the following: *C. Venus*, rose-pink edged with yellow; *C. Niagara*, only 1½ feet high, of a brilliant shade of scarlet edged with golden yellow.



[Photograph by S. Wynham Fitzherbert.]

FIG. 37.—OLEARIA NITIDA, A HARDY SHRUB.

variety has a white throat and overlapping segments—the flower of the future, as Mr. Cannell hopes. Some have spotted throats, and others have pretty spots on the margins of the segments, whilst striped throats were observed in some; and in others crimson lobes and pure white throat. One named “Her Majesty” is white, of immense size and fine shape. Another, “The Giant,” is quite 6 inches in diameter, and a variety “Miss Willmott” is a fine one of the colour of the *Verbena* so called. A nice collection of *Impatiens Sultani* and *I. Holstii* varieties—German raised—called for attention by reason

low, with scarlet spots—the flowers large; *C. Mrs. C. A. Strohelein*, a fine crimson variety; *Evolution*, a fine, old variety of buff and yellow colours and a big spike; *Duke Ernest*, a scarlet which, though of large size, stands the weather well; *Frau E. Kracht*, of a salmon-pink tint having a yellowish tinge; *Julius Metz*, an orange-scarlet-coloured bloom—a very fine thing. Others possessing high merit were *Papa Crozy*, *W. Watson*, *Gladiator*, *Elfe*, *Jean Monval*, *W. Tell*, and *Hermann Aldinger*, a rich crimson flower.

In the *Carnation* house there were noted

Souvenir de la Malmaison Princess of Wales (Newton Don variety), a fine flower of a light pink colour; and Duchess of Marlborough, also pink in colour with stripes of darker tint, a fancy, having a perfect flower, very good for cutting purposes. Numerous American varieties were observed, of which Prosperity, having carmine stripes, on a white ground, deserves notice.

The Begonias in another house were a beautiful lot that could scarcely be excelled. Mr. Cannell has been raising Begonias for the past 20 years. One of his new varieties, of which there can be only one opinion, has imbricated petals like those of *Camellia imbricata alba*; and, like others of the collection, it never produces seeds, but must be raised from cuttings. Comet is a double flower of a scarlet

leaves partake of the Oakleaf form, and the colour of the flowers is pleasing. The winter-flowering Zonal Pelargoniums were making fine growth, and will keep in bloom for an entire year—a most valuable class. Among varieties of double and single flowered Pelargoniums raised at this nursery, mention should be made of Arabic, scarlet with an eye of white, and a fine truss; Saxonia, even larger, and of the same colour; Lucania, likewise scarlet in colour, with very large blooms and truss; Carmania, of a rosy-scarlet tint, producing a very big truss, the individual pips of which are big, and the foliage distinctly zoned; and Chauteraine is a pale pink flower having an edge of a darker shade. Of double-flowered varieties in bloom there were Val Fleuri (a deep

from insects is fully appreciated by the London salesmen to whom the fruit is consigned, and the prices obtained are therefore much in excess of the ordinary ones paid.

A wash, non-poisonous and colourless, manufactured by Messrs. Cannell and Sons, is applied by means of a "Vermorel" sprayer at all stages of growth, excepting when the fruits are ripening, to all kinds of fruit bushes and trees. *M.*

NOTICES OF BOOKS.

ROCK AND WATER GARDENS.*

THIS book is written, as the author informs us in the preface, for those who love the flowers of mountain and stream, of Alpine pasture, and reed-fringed pool; for those who gladly welcome into their gardens a class of plants whose beauty and charm is not surpassed by any other. It is also written with the hope that it may arouse interest in those who have no knowledge of rock and water plants, and yet have facilities for growing them.

The book embraces some 90 pages, and in its twelve chapters deals with: I., "Rock and Alpine Gardens"; II., "Rock Garden Construction"; III., "The Garden of Alpines"; IV., "The Rock Garden in Spring"; V., "Rock Garden Plants"; VI., "Rock Shrubs"; VII., "Wild Water Margins"; VIII., "Small Water Gardens"; IX., "Bog and Marsh Gardens"; X., "Lily Tanks"; XI., "Water Lilies"; XII., "Aquatics and Bog Plants."

There are numerous illustrations which have a direct bearing upon the varying phases of the work with which the book deals, and a more or less complete index will afford some assistance for reference. The book is written in an interesting and intelligent manner, and the pleasure excited by a glance at the early pages of the book increases with further reading.

Chapter I. deals with rock and Alpine gardens, and defines the difference between the rock garden and the rockery. The latter, with its collection of clinkers, pottery, and the like, "no good gardener will tolerate, contravening, as it does, all ideas of good taste and artistic perception."

The rock garden, we are informed, "is a definite piecing together of natural rock and stone, and is so formed that it shall offer ideal conditions for the growing of Alpines and such plants as occur naturally on mountain sides and at high elevation." We can scarcely agree with the author when he states, on page 3, "It is not so much the altitude that suits these miniature flowers, but rather the absence of plants of robust habit and coarse growth," for there are many native plants of the higher altitudes that miss the great snow-mantle that for many months each year protects them, keeping them dry and free from the changes from wet to frost so frequent in a lowland garden.

The need for a greater depth of a proper rooting medium than is usually afforded these plants, and "the rich soil they certainly do not need," are items of importance commented upon. We note with pleasure, on page 6, a condemnation of those perpendicularly set stones, or others that form "a roof to the plants beneath," for there is nothing more opposed to good effect, or to the growth of Alpine plants, than these nearly perpendicularly-placed stones, all the more incongruous when of clearly stratified rock. These "impossible pinnacles" are worse than useless.

Valuable, and full of sound instruction, is the chapter on "Rock Garden Construction." The chapter dealing with "The Garden of Alpines" is especially helpful in that it deals minutely in not a few instances with the likes and the dislikes of many Alpine plants; and the information afforded on these points merits

* "The Book of Rock and Water Gardens," by Charles Tonger. Published by John Lane, London. Price 2s. 6d.



FIG. 38.—A FLOWERING SPRAY OF *OLEARIA NITIDA*: FLOWERS WHITE.

(See page 94.)

colour; Blush Queen is an extremely large flower; Lord Stradbroke is a grand scarlet bloom, and W. H. Grenfell; Lady E. Mallet, rose-coloured with a white centre; Sunflower, of a pale yellow tint, double and large; and Enchantress, of pink and buff colours, are all good varieties. A new strain of tuberous Begonia has channelled petals, very pleasing, and scalloped margins.

Pelargoniums, for which the firm has achieved great reputation, were in fine bloom; and of these I may mention Omphale, a flower of a salmon-pink colour, with large pips and trusses; Clorinda, one of Dr. Bonavia's raising, blooms in mid-winter, and at other seasons; the

cerise), MM. Fournier, Sarloveze (of a charming pink tint), Mdle. Meindre (a distinct salmon-pink), Paul Rebaux (pinkish crimson), Queen of Spain (cerise), Paul Crampell (one of the best for potwork as for bedding), and very bright. Of this last, it is said Her Majesty the Queen will have no other variety planted in the gardens at Buckingham Palace.

On visiting one of the mixed fruit plantations, one could but be impressed by the extraordinary heavy fruiting of the Raspberry canes, every blossom of which appeared to have set, the crop being the heaviest possible, and the fruits entirely free from insects of every kind injurious to this fruit. The value of this freedom

careful perusal. Nor will the reader be overdone with these hints at any point of the story; rather does he come upon them at intervals, the results, as it would appear, of diary notes made on the mountain side, and amplified at leisure. But if in this sense disconnected somewhat, the freshness and the interest remain throughout.

The lists of plants supplied at the end of Chapter V. is very meagre, and no mention is made of some of the choicest plants, such, for instance, as *Adonis amurensis*, *Androsaces lanuginosa*, *pyrenaica* and *sarmentosa*, and Alpine *Columbines*. In the list of *Dianthus*es, *D. alpinus* is absent, but *D. cæsius* and *D. deltoideus* find a place. *Anthemis aizoon*, cited on page 38, and which we have found of doubtful hardness in some parts, and wholly unreliable in others, is now referred to as *Achillea ageratifolia*.

"Lily Tanks" and "Water Lilies" are treated of in the concluding chapters, and, of the latter plants, a full descriptive list is given.

The illustrations facing pages 6 and 8 afford proof of what may be done in quite a small way in this style of gardening. The "Wild Garden" scene, page 20, is also of educational value.

CAMPANULA PUNCTATA.

THIS very distinct bell-flower (see fig. 39) produces long, pendent, white flowers. It requires good culture and an ample supply of moisture at the roots to be seen at its best. When growing in rich, deep soil, with a plentiful water supply it forms a plant of very different appearance to specimens in poor, dry ground, where it becomes so changed in character for the worse as to be hardly worth growing. It is an old garden species, but one rarely met with nowadays. It attains to a height of 2 feet, and its drooping, white flowers are rather over 2 inches in length and about an inch across at the mouth. Although pure white on the outside, these flowers are spotted in their interiors with innumerable small purple-red dots. The blossoms are hairy. In some cases the flowers, instead of being white, are of a soft rose-colour. This plant has a very wide range of habitat, being found in Siberia, China, Japan and Corea. In places not suited to its culture it often dies in the winter, and has, in consequence, sometimes been classed as an annual, but it is a true perennial. *S. W. Fitzherbert*. [An excellent illustration of the flowers of this species was given as a supplement to *Gardeners' Chronicle*, August 26, 1905.—ED.]

LAW NOTE.

PLANTS DAMAGED BY CREOSOTE FUMES.

A NURSERYMAN carrying on business in Cheltenham Road, Bristol, recently made a claim against the Bristol Tramways and Carriage Co. for damages for injury to plants alleged to have been caused by fumes from newly laid creosoted wood-paving blocks. The company said that nothing they had done had caused the injury to the plaintiff of which he complained, and in the second place they said if they had done it they were protected by Acts of Parliament which empower them to do the injuries complained of. The jury, after having been absent for 1½ hours, returned the following answers to the questions:—

(1) Do you find that the injury to the plaintiff's plants was caused by the wood paving or not?—We find it was.

(2) Do you find that it was reasonably necessary for the defendants to repave the road in the way they did, and at the time they did?—Yes; but in the light of the evidence given at the hearing, No.

(3) Do you find it was absolutely necessary for the defendants to repave the road as they did, and when they did, or not?—No.

Mr. Inskip, upon these answers, asked for judgment for the plaintiff.

Mr. Salter asked for judgment for the defendants as the answer to the second question was quite conclusive. He contended that the defendants were entirely protected by statute.

Eventually the judge entered judgment for the plaintiff, but stay of execution was granted, with a view of entering an appeal.

KEW NOTES.

A GLIMPSE OF THE GARDENS IN JULY.

JULY is rather late for the Kew rock garden, as the *Ramondias* and most species of *Meconopsis* are then out of flower, but there are many interesting plants still to be seen. Two tall specimens of the blue Himalayan Poppy, *Meconopsis Wallichii*, were still in bloom, and in a damp situation two of the new *Rodgersias* were very handsome. *R. pinnata*, with large, deeply-corrugated leaves, divided into seven sections and great, branching heads of small, white, red-centred flowers, carried well above the foliage, was very fine; and *R. tabularis*, with finely formed leaves and bearing a feathery, white flower-head, was attractive. A group of *Orchis foliosa*, from Madeira, was in good bloom. *Linaria dalmatica*, with tall, branching spikes of yellow flowers, 4 feet in height, was very effective; and the mauve-flowered, creeping Pea, *Lathyrus maritimus*, was pretty. *Linum flavum* was a mass of bright yellow; *Polygonum affine*, set with long, pink

persicifolia and varieties, *C. glomerata dahurica* and *C. g. alba*; *C. garganica*, a sheet of soft blue; *C. carpatica* and its beautiful variety *C. c. pelviformis*, *C. latifolia macrantha*, *C. lactiflora*, *C. Burghaltii*, with drooping, lavender-pink coloured flowers; *C. G. F. Wilson*, *C. mirabilis*, with pale-purple, bell-shaped blossoms on a branching spike 9 inches in height; *C. linifolia*, purple, 1 foot; *C. phytidocalyx*, 2 feet in height, with purple, bell-shaped flowers; *C. spicata*, with long, lavender-purple flowers closely set on a spike 2 feet in height; and *C. tomentosa*, bearing small, star-shaped, mauve-blue coloured flowers on a low spike. *Dianthus callizonus*, *D. cæsius*, *D. deltoideus*, *D. Sternbergi*, *D. superbus*, *D. viscidus*, and *D. Waldsteinii* were in bloom; and of *Geraniums*, *G. argenteum*, *G. armenum*, *G. cinereum*, *G. nodosum*, *G. sanguineum*, with its varieties *G. s. album* and *G. s. lancastriense* and *G. subcaulescens*, were in flower. Among the *Gentians* were *G. decumbens*, the tall *G. lutea*, *G. Walujewi*, clear blue, and *G. Kesselringii*, white purple-spotted, both from Turkestan; *G. phlogifolia*, deep blue, from Transylvania, and *G.*



[Photograph by S. Wyndham Fitzherbert.]

FIG. 39.—CAMPANULA PUNCTATA: FLOWERS WHITE OR PALE ROSE-COLOUR WITH PURPLE-RED SPOTS.

flower-spikes, was clambering over an old tree stump; and *P. sphaerostachyum*, from the Himalayas, was bright with crimson blossoms. A mass of *Acantholimon glumaceum*, 3 feet across, was covered with pink flowers, but *A. venustum* is a prettier plant. The blue-flowered *Pentstemon heterophylla*, a foot in height, was attractive; as was *Potentilla nepalensis*, with buff, crimson-eyed blossoms, and *Sphaeralcea acerifolia*, 4 feet in height, with pale, pink flowers 1½ inches across, having a black blotch at the base of the petal, was good. Another charming plant was *Symphandra ossetica*, from the Caucasus, with heads of lavender-blue, drooping flowers an inch in length; while *Zigadenus elegans* was very graceful with its branching flower spikes, 3 feet in height, of small, greenish blossoms. Many *Campanulas* were in flower, these including *C. pusilla* in large groups, *C. rotundifolia soldanelliflora*, a very pretty form of the common Harebell, of which a mass was hanging over a rocky ledge; *C.*

straminea, from China, with white flowers spotted with purple on the exterior.

In the garden of herbaceous plants, a group of the annual *Meconopsis heterophylla*, with dark-eyed, orange-coloured flowers, was very handsome.

At Kew the good effect produced by planting single varieties of *Roses* in masses may be appreciated. A large round bed was filled with *Caroline Testout*. Other good beds were those of *Frau Karl Druschki*, *Mme. A. Chatenay*, *Captain Christy*, and *Mrs. John Laing*. In the *Rose dell* a great breadth of *Fellenberg* in full bloom was a picture, and rambling masses of *Psyche* and *Clothilde Soupert* were charming. A large bed of *Spiraea discolor*, better known as *S. ariæfolia*, in the zenith of its blossoming, was a lesson in effective grouping, and a *Conifer* shrouded with *Polygonum baldschuanicum* in full flower was a lovely sight, and showed how well suited this hardy climber is for beautifying trees that are past their best. *S. W. Fitzherbert*.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

FLORA OF PALESTINE.—In the review (on p. 62), of the *Flowers and Trees of Palestine*, it is stated that Lign-Aloes had nothing to do with the modern plant, but is a mistranslation of the Hebrew word for tents. I have discussed the word in the *Encyclopædia Biblica*, and in Numbers 24, 6, the word is not a mistranslation or rather misreading for "tents," but for terebinths. But the Aloes mentioned in three other passages was the same thing as Lign-Aloes and was not the medicinal drug. The philological evidence is convincing that it was identical with the Eagle-wood of the east which was certainly known to the Greeks. The evidence for identifying Hyssop with *Satureia Thymbra* is plausible. I incline, however, myself to think it was the Caper, which is a ubiquitous wall plant in the eastern Mediterranean countries. *W. T. Threlton-Dyer*.

SUMMER PRUNING OF FRUIT TREES.—Having read the correspondence published on this subject and studied the tables (pp. 400-403), it seems to me that many correspondents have confused the practices of summer pinching and summer pruning. The former I look upon as perhaps the most useful operation in the culture of garden fruit crops, and the latter the most fruitful source of failure. I believe that more trees are spoilt by summer pruning than from all other causes combined, save natural ones, such as inclement soil or adverse climate, over which the gardener has only very partial control. The dates given by the compilers of the tables show to a great extent what their practice is, for when one reads June as the date of summer pruning one knows that pinching is implied, and when August is named then pruning is the practice. To consider the difference between the two, we will take, for example, any of the trees which bear their fruit on spurs, such as the Apple, Pear, Plum, and most Cherries, and for a typical tree a single cordon. If the side shoots of such a tree are pinched when they have made six leaves, they are prevented from becoming gross, and the lower buds become plump and develop into fruit spurs. These pinched shoots will grow again from the two end buds, and the secondary shoots should be pinched again, say, in July. In winter pruning, the side shoots of young and vigorous trees should not be cut below four buds until a fruit bud is formed, when they may be cut back to the fruit bud. If the shoots are closely pruned to two buds, as many are, the result is that both the buds left make growth the following season, and the tree becomes crowded with leaves and produces no fruit until it is so exhausted by the treatment that it refuses to grow more or until that drastic operation known as root-pruning is resorted to. When the date of summer pruning is deferred until August the effect may be beneficial, but if rains are frequent most of the buds left will break into growth and thus prevent the formation of blossom buds, but be this as it may, the side shoots will have become very strong and will be less inclined to produce fruit spurs than the thinner growths, resulting from the pinching system. If strong side shoots are pruned in July the buds must break into growth, and the result is a thicket of growth. The preceding remarks apply, of course, to young and vigorous trees growing in good soil; older trees, which are in full bearing or which are growing in poor soil, will bear closer pruning because they have a weaker flow of sap and more outlets for it, but even with these I think pinching is in every way preferable to pruning later. With the question of pressure of work at the time when the trees should be pinched I am not concerned, but I know that in many cases this is a serious consideration, and I would advise the breaking of the shoots half across at some six or eight buds from the main shoot. Leave the ends of the broken shoots hanging by a portion of wood and bark, and the end portion will absorb some of the sap, whilst the check will cause the basal buds to plump up and develop into fruit buds. I have taken a single cordon tree as an example, for the shoots of a horizontally trained tree are really many cordons, and a pyramid trained tree should consist of many cordons radiating from a central stem. Few

market growers will entail the expense of this kind of restrictive pruning, and they prefer their trees to grow practically naturally after the first few seasons, though one may see hundreds of acres of fruit plantations in Worcestershire where every tree is grown as an open bush and in which each branch is pruned like a single cordon, and the growers make money by the practice. I need scarcely assert what every practical gardener knows, that pinching is far better for stone fruits than pruning, for pinching is never followed by gumming whilst pruning frequently is. Nurserymen know this so well that they pinch the leader out of yearling Peach, Apricot, Cherry trees, &c., required for training, and induce the side shoots to form the first season instead of growing them as maidens and then cutting them back the following winter, the result being that gumming is reduced to a minimum. *A. H. Pearson, Loddham*.

POTATO MUTATION.—A white small-tubered species is assumed to have converted one of its tubers into a huge blue one, and whilst to every simple gardener the finding of such a tuber under such conditions would have been at once attributed to a common-sense cause, it is by other persons regarded as a product of "mutation." In another case *Solanum Maglia* has been said to produce a tuber of the variety *Vicar of Laleham*—again by mutation. How profoundly misleading it all is! How like is it all to the credulity of a correspondent who last autumn sent me two tiny seedling Kidney Potatoes, one white, the other red, and which he declared had originated from the same seed and plant. I assured him he was mistaken, and this year planted both tubers, and these have tops as dissimilar as Potato tops well can be. *A. D.*

MELON TRIALS AT WISLEY.—The extensive trial of Melons which is this year being undertaken by the Royal Horticultural Society at Wisley offers an opportunity of determining the relative value of the many varieties of this fruit, and should result in eliminating from the long list of kinds many of the synonymous and inferior varieties. It will also enable the fruits to be classified according to the colours of their flesh, as well as to note the best Melon in the collection irrespective of class or colour. About 70 varieties are growing under precisely the same conditions. The earliest planted batches of plants are accommodated in light span-roofed houses, and the later batches are grown in low frames or pits. The earliest fruits will be ripe in the course of a fortnight or three weeks. I have seen the plants on two occasions during the past six weeks, the most recent occasion being a little over a week ago, and healthier or better cropped plants it would be difficult to find. The trials, when judged, will be interesting in many ways. One wonders how those varieties which have been certificated by the society from time to time will fare! It is asserted by some growers that a variety of Melon deteriorates in the course of time, hence the necessity for occasionally raising a new kind by cross fertilisation; but other persons hold that once a good Melon, always a good Melon. This trial should throw some useful light on this point. Flavour, however, will be the test of highest merit. At the same time it would be useful to note which varieties are the earliest to ripen their fruits, the heaviest croppers, and which are the handsomest and most attractive fruits. This would all be useful information, for growers for market attach importance to weight and appearance in Melons. It will be impossible to arrange a day when the fruit of all the several varieties will be ripe together, and to judge some growing on the plants and others in a cut state at the Fruit Committee's table in London would scarcely be fair treatment. Apart from the quality of high flavour—which is, of course, the most important of all—there are other considerations, such as robustness of growth, cropping capabilities, &c., which influence the judges in their award to growing plants that cannot be seen when a fruit is shown singly on a plate. It is also well known that ripe Melons in hot weather soon lose their flavour when cut. It is to be hoped that as many varieties of these Melons as is possible to be had will be exhibited at the Royal Horticultural Society's exhibition at Vincent Square, as much public interest is evinced in this delicious and refreshing summer fruit. *Owen Thomas*.

A WARNING!—I wish to warn readers of the *Gardeners' Chronicle* of a man who offers books for sale and who requires cash with the order, as he states he is going to Australia. A friend of mine living in London went to inspect the books so offered at the address given by Mr. — before my sending the cash. He found that the seller was not known there, neither had he ever lived there, but a stranger had called for letters addressed to the name I enquired for. *Harry Curtis, Lancashire*.

AN UNUSUAL NESTING-PLACE.—I recently saw a young cuckoo in a nest in a hanging wire basket containing Ivy-leaved Pelargoniums, and suspended on the verandah in front of a drawing-room not 5 feet from the front window. A pair of water wagtails had built a nest in the basket, and I was informed that the young cuckoo had turned out four eggs of the wagtails' to accommodate itself. The wire basket is about 16 inches in diameter and is suspended by three wire chains. It appears almost impossible for an adult cuckoo to pass between these wires, and this fact lends some evidence to the statement that the cuckoo lays its egg on the ground and afterwards deposits it in the foster mother's nest by its bill. *Jas. Jno. Foster, Stanmore, Middlesex*.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

JULY 23.—Present: E. A. Bowles, M.A., F.L.S. (in the chair); Rev. W. Wilks; Prof. Boulger; Dr. Cooke; Messrs. Worsdell, Shea, Spencer Pickering, Güssow, Worsley, Bennett-Poë, Douglas, Sutton, Massee, Holmes, and Chittenden (hon. secretary).

Dying Beech trees.—Mr. Güssow reported that he had examined the wood of the Beech sent to the last meeting and found the mycelium of a *Polyporus* growing in it. He had little doubt that the death of the tree was due to this parasite.

Fuchsia, Vine, and Aucuba.—Messrs. MASSEE and GÜSSOW reported that no fungi could be found in the tissues of either of these sent to the last meeting.

Memorial of Dr. Masters.—Rev. W. WILKS repeated a suggestion he had already brought forward in the Press (see *Gardeners' Chronicle*, June 22, p. 408) concerning the establishment of a permanent memorial of the late Dr. Masters, to take the form of a series of lectures to be delivered annually before the Royal Horticultural Society by some eminent scientific man upon some phase of the relationship between science and horticulture, these lectures to be published broadcast among gardeners. The suggestion met with the cordial approval of the committee, and a sub-committee was appointed to further the matter, consisting of Messrs. E. A. Bowles (chairman), Sir Trevor Lawrence, Arthur W. Sutton, C. E. Shea, J. T. Bennett-Poë, James Douglas, Sir J. T. D. Llewelyn, Dr. Cooke, Rev. George Henslow, M.A., Lt.-Col. Prain, Miss Willmott, Dr. Rendle, Professor J. Bretland Farmer, W. Bateson, H. J. Veitch, G. Nicholson, Professor Church, and Rev. W. Wilks (secretary), with power to add to their number.

Germination of seeds in sterilised soil.—Mr. SPENCER PICKERING raised the question of the germination of bacillus-free seeds in sterilised soil, stating that he had found that the heating of soil to 60° C. and upwards retarded the germination of the seeds to a very marked extent, just as he had found the growth of trees in heated soil was retarded. The seeds (Ryegrass and Mustard) had been sterilised with carbon bisulphide, and had germinated after treatment quite freely in ordinary soil. Different members of the committee mentioned sources of information upon this point.

Galls on Willow.—Prof. BOULGER showed some galls upon Willow similar to those shown last year by Mr. CHITTENDEN, due to the attacks of a mite. The galls were this year very common around Loughton and Buckhurst Hill in Essex, and formed large masses of short shoots with crowded, much-shortened leaves.

Fasciated *Lilium candidum*.—Mr. BOWLES showed on behalf of Mr. HYDE, of Enfield Highway, a fasciated stem of this Lily. The stem

was about 3½ inches broad, and bore a very large number of small flowers.

Lueddemannia Piscatorci.—Mr. BOWLES also exhibited a large spike of this remarkable species, which has already received a botanical certificate.

Chlorosis in fruit trees.—Specimens of Apples on the Paradise stock; Pears on the Quince, Peaches, Nectarines, Plums, Raspberries, and Vines were received from near Glastonbury, all with their leaves showing yellow spots or being wholly yellow. A variety of causes may bring about this condition, such as lack of iron, lime, or potash in the soil, and at times insufficient drainage, combined with lack of sun, &c., may produce similar results.

THE HORTICULTURAL CLUB.

JULY 25.—The annual outing of this club took place on the above date, when about 80 of the members and their friends visited Friar Park, Henley-on-Thames, the residence of Frank Crisp, Esq., by whom the club had been kindly invited. The weather was good, except that in the afternoon rain fell for about one hour, which, however, hardly affected the visitors at all, as the time was fully occupied in inspecting the conservatories containing the collections of rare plants which Mr. Crisp has acquired. Starting from Paddington, three saloon carriages were provided, which conveyed the party to Marlow. From Marlow the visitors proceeded on foot through the pretty and quaint village to the river-side, where Mr. Crisp himself welcomed his guests on board a handsome steam launch provided by him to convey them to Henley. A delightful trip through the lovely river scenery followed, a charming panorama of umbrageous wooded hills, interspersed here and there with beautiful mansions, unfolding itself as the vessel glided noiselessly along, the host giving the history of the various interesting features as they were approached. Reaching Henley, the party disembarked at Mr. Crisp's boat-house, a very unpretending name for a handsome building, which not only accommodated boats below, but permitted of over four score guests being entertained in the hall above it. Mr. Crisp made a humorous speech, intended to forestall a toast in his honour, but, vainly, for Mr. Harry Veitch declined to be thwarted, and, in proposing the host's health, coupled with it the hope that Mr. Crisp would accept the vice-presidency of the club, which he consented to do.

Carriages then conveyed the ladies of the party to Friar Park, the gentlemen following on foot, and here the beautiful house and surroundings met with full appreciation. In many respects the gardens appeared to be unique, for, apart from their water-scapes and super-terrestrial landscape arrangements, the ground is honey-combed with a labyrinth of caverns and grottoes teeming with weird and curious effects. The rock-garden is astonishing in its extent and design; no fewer than 7,000 tons of rock, some of the masses weighing 5 to 7 tons, cover a steep declivity in such a fashion as to represent a mountain stream-bed deviously descending a rocky ravine, while from a comfortable chalet at the lower level the eye travels upwards from one towering mass to another, until, apparently far away beyond the farthest bluff, a peak which one might imagine to be the Matterhorn itself abruptly pierces the sky-line, its sides seamed with apparent snow, and the snow-clad slopes on its lower flanks carrying the eye onwards behind the rocks in the most deceptive fashion conceivable. The rocky foreground is the congenial home of a magnificent collection of Alpine plants, which in the late spring are sheets of floral beauty, and even at the present time are charming in their varied verdure and habit. Beneath the Matterhorn there is an ice cavern, whose artificial nature was only betrayed by the temperature, curiously arranged and hidden electric lights imparting a blueness and transparency here and there to the walls and roof which was most illusive, while in some places stalactites and stalagmites covered roof and floor.

Lower down the valley, so to speak, we plunge down some rocky steps to another cavern, teeming with gnomes and pixies, owls and bats, cats and spiders, and a thousand and one other

quantities of a romantic underland and wonder-land, while in recesses are deftly inserted mirrors, which in some cases reflect the visitors themselves in gnome guise to fit their surroundings, and in others multiply their numbers indefinitely. Another series of caves elsewhere are only traversable by boat, as they form a subterranean channel from one part of the lake to a distant one. Space precludes more than a brief allusion to the conservatories, with a wonderful collection of Cacti, and embracing a newly-designed and very beautiful sunken Fernery, representing a deep ravine with Fern-clad walls, which Mr. Knowles (Mr. Crisp's able gardener) has constructed on the lines of the Fern-house in the Belfast Botanic Gardens.

In the afternoon the party had tea in a tent on the lawn, and subsequently were driven or walked to the station, whither the saloon carriages had been transferred for their accommodation after a most delightfully instructive and amusing day in many respects. T.

[An illustrated article upon these remarkable gardens was published in our issue for October 28, 1899.—ED.]

CARDIFF AND COUNTY HORTICULTURAL.

JULY 24 & 25.—The annual exhibition held in connection with this society took place in the Sophia Gardens on the foregoing dates. Taking into consideration the cold, wet season experienced till within the previous fortnight, the exhibits were of a very creditable character. The backwardness of many subjects was evidenced in the exhibits, but nowhere more than in the collections of hardy cut flowers, for many usually over by this date were staged in good condition, whereas others generally in evidence during this period were missed, presumably on account of their not being forward enough. Not only had the backward season an effect upon the classes devoted to cut flowers, but the recent hailstorms, by the damage they had wrought, were responsible for the absence of several competitors in the Rose and Sweet Pea classes.

GROUPS.

The class for a group of miscellaneous plants arranged for effect in a space measuring 150 square feet was open to all. Lady HILL, Llandaff (gr. Mr. McIntyre), was placed 1st for an artistically-arranged collection. The centre was in the form of an arch, crowned with a specimen of *Cocos Weddelliana*, and the whole design was characterised by lightness of arrangement. Plants of *Humea*, *Campanula pyramidalis*, *Liliums*, fine-leaved *Bamboos*, and *Francoa* were the most noticeable features in this exhibit. 2nd, Col. WALLIS, Newport (gr. Mr. D. Powell); 3rd, Messrs. JAS. CYPHER & Co., Cheitenham.

In a class restricted to amateurs, Mrs. E. LEWIS, Llandaff (gr. Mr. Wall), secured the 1st prize for a group occupying a space of 50 square feet. *Cocos Weddelliana*, *Coleus*, *Schizanthus*, and variegated *Eulalias* were the prominent features of this group. 2nd, Mr. JAMES HOWELL (gr. Mr. Brown).

The Marquis of BUTE (gr. Mr. H. Farmer) exhibited a non-competitive group of choice stove and greenhouse plants, arranged with pleasing effect in a space of over 200 square feet.

CUT FLOWERS.

Roses.—For a collection of 36 *Roses*, in 12 distinct varieties, Messrs. J. JEFFERIES & SON, Cirencester, were awarded the 1st prize. Their best blooms were those of Bessie Brown, Horace Vernet, Mildred Grant, and Her Majesty. 2nd, Messrs. S. TRESEDER & SON, Cardiff. In this exhibit were specially good blooms of the varieties Frau Karl Druschki and Caroline Testout.

Messrs. J. JEFFERIES & SON were equally successful in the collection of 36 Tea or Noisette *Roses* in 12 varieties. Madame J. Graveroux, Catherine Mermet, and Souvenir de Pierre Notting were three outstanding varieties in this collection.

The KING'S ACRE NURSERY Co., Hereford, were awarded the 2nd prize in this class. They had Medea, Marie van Houtte, White Maman Cochet, &c.

Messrs. JEFFERIES & SON again beat all other competitors in the class for a collection of 24 distinct varieties of *Roses*, and also in that for 18 varieties of Tea or Noisette *Roses*. Messrs. JARMAN & Co., Chard, took the first prize for a box of 12 blooms of one variety of a Tea Rose with the variety Mrs. Ed. Mawley. White

Maman Cochet, exhibited by Messrs. S. TRESEDER & SON secured the 2nd prize.

Sweet Peas were well shown in the various classes devoted to these flowers. Messrs. S. STARK & SON, Great Ryburgh, Norfolk, gained the first prize for 19 bunches of distinct varieties of Sweet Peas, amongst which were Henry Eckford, Enchantress, and Queen Alexandra. 2nd, Messrs. JARMAN & Co., Chard. In the audit class, Mr. R. BATHURST, Cudleigh, and Lady MOREL, Penarth, were respectively awarded the 1st (which included a gold medal) and the 2nd prizes. Mrs. JENNER, Wenvoe Castle (gr. Mr. Harris), staged a collection of 12 distinct varieties of Sweet Peas, tastefully arranged with Fern, Gypsophila, and grasses, and for which a 1st prize and a silver medal were awarded.

Miss HEMUS, Upton-on-Severn, exhibited two new varieties of Sweet Peas, which had already secured Awards of Merit, including the R.H. Society's. These were Evelyn Hemus and Paradise Ivory. Messrs. STARK & SON showed a number of novelties amongst Sweet Peas, of which Olive Ruffell is a richly-coloured flower of the Countess Spencer type, with an ivory-coloured base; Geo. Stark, of the colour of Queen Alexandra, but with the Countess Spencer form; and New Waved Mauve, one of the best mauves in the show.

Hardy flowers.—The flowers of hardy plants were much in evidence, and added colour and interest to most of the tents. Although certain classes were restricted to hardy flowers, no stipulation was made that they should not be grown under glass; in consideration of this fact several of the successful exhibitors added greatly to the value of their groups by including *Lilium auratum*, *L. speciosum*, and *L. Harrisii*, none of which are as yet in bloom in the open.

Mr. W. TRESEDER, Cardiff, was placed first with a prettily-arranged collection of hardy flowers, occupying a space of 45 square feet. *Spiraea Davidii*, *Catananche bicolor*, Iceland Poppies, Carnations, and Water Lilies were the outstanding features of this group.

Messrs. H. & W. EVANS, Llanishen, were a close 2nd, with a fine array of well-grown flowers, amongst which *Iris Kæmpferi* in variety, *Spiraea venusta* in variety, *S. palmata*, *Cimicifuga racemosa*, Dwarf *Gladiolus*, and *Lilium testaceum* were noticeable.

FRUIT AND VEGETABLES.

Competition in the classes for Grapes was keener than usual, and in spite of the sunless season the berries on the whole were well coloured. As might be expected, the culinary Apples shown at this early period of the year were very inferior samples, and it is difficult to see the reason for including them in the schedule of an early summer show.

In the class for a collection of dessert fruits, to include six dishes of distinct sorts, Col. HENRY, Ledbury (gr. Mr. Sikes), carried off the 1st prize. The collection consisted of a dish of three bunches of large, deeply-coloured Black Hambro Grapes, a Countess Melon, Early Rivers Nectarines, Frogmore Early Cherries, Hale's Early Peaches, and Brown Turkey Figs. 2nd, G. A. GIBBS, Esq., Flax Bourton (gr. Mr. Wilkinson).

Vegetables were, perhaps, the most meritorious exhibits at this show, and were greatly admired by those interested in this side of gardening. The 1st prize, including the Royal Horticultural Society's Bronze Medal, was won by Lord ALDENHAM, Elstree (gr. Mr. E. Beckett), for a collection of nine distinct kinds of vegetables, arranged in a space measuring 20 square feet. The following were the kinds and varieties included:—White Leviathan Onion, Globe Artichoke, Early Giant Cauliflower, Sutton's Black Beet, Gladiator Potato, New Red International Carrot, Centenary Pea (extra fine), Perfection Tomato and Canadian Wonder Bean. 2nd, Mrs. JENNER, with an exceedingly clean, well-grown collection.

CRAWLEY FLOWER SHOW.

JULY 24.—The fourth annual exhibition of the Crawley and District Gardeners' Association was held on this date in the grounds of Goff's Hill. The weather was favourable, and a large attendance of the public resulted.

Mr. A. B. Wadds (gardener to Sir WEETMAN D. PEARSON, Bart., Paddockhurst), won the

Silberberg Challenge Cup in competition with nine other competitors. Competition was keen throughout the show, and the quality of most of the exhibits was good. There were 450 entries staged by 190 exhibitors, the gardens competition attracting no fewer than 16 entries against the seven of last year. In spite of the fact that three marquees had been prepared to receive the competitors' produce, they were unable to accommodate all that was brought. Several exhibits were placed in outside stalls, and others could not secure even that opportunity for display. The non-competitive exhibits were very numerous and of remarkably good quality.

BRITISH GARDENERS' ASSOCIATION.

JULY 23.—A meeting of the Executive Council was held on the above date in the Royal Horticultural Hall, Vincent Square. Mr. Chas. Foster presided. Six new members were elected, bringing the total membership up to 1,078. One candidate was rejected.

Mr. Lewis Castle was appointed editor of the Society's *Journal*. The question of supplying each member with a certificate for framing was considered. The granting of a special diploma for those members who had distinguished themselves as horticulturists was proposed, and a scheme will be submitted at the next meeting.

A scheme for the examination of gardeners will also be submitted at the September meeting. J. Weathers, Secretary.

DEBATING SOCIETIES.

DONCASTER GARDENERS'.—Forty members of the above association visited, on July 16, the nurseries of Messrs. Clibran, at Hale. The weather was beautifully fine. The stock of trees and shrubs was inspected, also the quarter devoted to Roses where upwards of 100,000 Rose trees are cultivated. The fruit plantations, which are some 15 acres in extent, and the beds of Violas, Pansies and Herbaceous plants were each visited. The glass-houses were also inspected. W. Wenman.

BRISTOL AND DISTRICT GARDENERS'.—A meeting held on Thursday, July 25, was entirely concerned with Sweet Peas. A competition was provided for under-gardeners for the best basket of Sweet Peas arranged at the meeting, and the prize was awarded to Mr. Coombes. Prizes were also offered for six vases of Sweet Peas, and these were won by Mr. Harford and Mr. Garnish. Several of the members spoke for a few minutes upon Sweet Peas, and the chairman, Mr. J. C. House, closed the discussion with a discourse, lasting half an hour, on these flowers. H. W.

CROYDON & DISTRICT HORTICULTURAL.—About 40 members of this society visited Wood Hall Gardens, Dulwich, S.E., on the evening of Wednesday, July 24. An enjoyable time was spent in inspecting the grounds, which in different parts command some excellent views of London. The glasshouses were also examined and darkness set in all too early for the visitors.

CATALOGUES RECEIVED.

ABBOTT BROS., Southall, near London—Fruit preserving bottles, &c.
CHAS. W. BREADMORE, Winchester—Sweet Peas.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending July 31.

Cool days and variable nights.—On the warmest day of the past week the highest reading in the thermometer screen was only 72°, which is but slightly in excess of the average for the time of year. On the contrary, on the coldest day the same thermometer never rose above 60°—or 10° colder than is reasonable. The nights proved very variable, the readings of the exposed thermometer on two of them being respectively as high as 49° and 52°, while on two others temperatures within 9° of the freezing point were indicated by it. At 2 feet deep the soil is now 1° colder, and at 1 foot deep 3° colder, than is reasonable. Rain fell on four days, but to the aggregate depth of only about a quarter of an inch. The percolation gauge covered with short grass, which had been re-started by the two heavy falls of rain in the previous week, has now become quite dry again, while only a few drops of rain-water trickles through the bare soil gauge. The sun shone on an average for less than 4½ hours a day, or for nearly 2 hours a day less than the mean duration for the end of July. The first two days of the week proved very calm, but since the winds have been moderately high, and have come exclusively from some southerly or westerly point of the compass. As was the case in the preceding week the air has remained very damp, the mean amount of moisture at 3 o'clock in the afternoon again exceeding a seasonable quantity for that hour by as much as 10 per cent. A selected Harebell came first into flower in my garden on the 27th. This is not only 15 days later than its average date of first flowering in the previous 15 years, but also later than in any of those years. E. M., Berkhamsted, July 31, 1907.

MARKETS.

COVENT GARDEN, July 31.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Ed.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Alstroemerias, per dozen bunches	2 0 4 0		Marguerites, white, p. dz. bunches	2 0 3 0	
Asters, dz. bunches	3 0 4 0		— yellow, per dz. bunches	1 6 2 0	
Bouvardia, per dz. bunches	2 0 3 0		Mignonette, per dz. bunches	3 0 4 0	
Calla aethiopica, p. dozen	2 0 3 0		Myosotis, per doz. bunches	1 6 2 0	
Carnations, per dozen blooms, best American various	1 6 3 0		Odontoglossum crispum, per dozen blooms	2 6 3 0	
— smaller, per doz. bunches	9 0 12 0		Pæonies, per doz. bunches	4 0 8 0	
— Malmsons, p. dozen blooms	6 0 10 0		Paneratums, per dozen fls.	3 0 4 0	
Cattleyas, per doz. blooms	12 0 15 0		Pelargoniums, show, per doz. bunches	4 0 6 0	
Chrysanthemum maximum, per dozen bunches	1 0 2 0		— <i>folia</i> , double scarlet	4 0 6 0	
Coreopsis, per doz. bunches	2 0 3 0		Pinks	1 0 3 0	
Cornflowers, per doz. bunches	2 0 3 0		Poppies, Iceland, doz. bunches	4 0 8 0	
Dahlias, per dozen bunches	3 0 4 0		— Shirley	2 0 3 0	
Eucharis, grandiflora, per doz. blooms	2 0 3 0		Pyrethrums, per dozen bunches	2 0 1 0	
Gaillardias, per dz. bunches	2 0 3 0		Ranunculus, per dozen bunches	4 0 6 0	
Gardenias, per doz. blooms	2 0 3 0		Rhodanthes, per dz. bunches	3 0 4 0	
Glaucolus, The Bride, per doz. bunches	3 0 5 0		Roses, 12 blooms, Niphetos	1 0 3 0	
— <i>Brachylepis</i>	4 0 8 0		— Bridemaid	2 0 3 0	
— various	4 0 9 0		— C. Testout	2 0 3 0	
Gypsophila elegans p. dz. bunches	2 0 3 0		— General Jacquem. mitis, per doz. bunches	1 0 2 0	
— paniculata, per dozen bunches	3 0 4 0		— Marechal Niel	1 6 3 0	
Iris, German, per doz. bunches	4 0 6 0		— Kaiserin A. Victoria	1 6 3 0	
— Spanish, p. dz. bunches	4 0 9 0		— M. J. Laing	1 0 3 0	
Lapageria alba, per dozen	1 0 1 6		— C. Monnet	1 0 3 0	
Lilium auratum	2 0 3 0		— Liberty	2 0 4 0	
— candidum, bch.	1 0 2 0		— Mad. Chateaux	1 0 3 0	
— lancifolium, rubrum and album	1 6 2 0		Saponaria, per dz. bunches	1 6 2 0	
— longiflorum	2 0 3 0		Statice, per dozen	3 0 4 0	
Lily of the Valley, p. dz. bunches	4 0 6 0		Stephanotis, per dozen trusses	3 0 5 0	
— extra quality	10 0 15 0		Stocks, per dozen bunches	3 0 4 0	
			Sweet Peas, p. doz. bunches	1 0 3 0	
			Sweet Sultan, per dozen bunches	3 0 4 0	
			Tuberose, per dz. blooms	0 4 0 6	

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Adiantum cuneatum, per dozen bunches	4 0 6 0		Galax leaves, per dozen bunches	2 0 2 6	
Asparagus plumosus, long trails, per doz. bunch	8 0 12 0		Hardy foliage (various), per dozen bunches	2 0 6 0	
— medium	1 6 2 0		Ivy leaves, bronze long trails per bundle	1 6 3 0	
— Sprengeri	0 6 1 0		— short green, doz. bunches	2 0 3 0	
Berberis, per doz. bunches	2 0 2 6		Moss, per gross	4 0 5 0	
Croton leaves, bch.	1 0 1 6		Myrtle (English), small-leaved, doz. bunches	4 0 6 0	
Cycas leaves, each Fern, English, per dozen bunches	1 0 2 0		— French, dozen bunches	1 0 1 6	
— French, dozen bunches	1 0 3 0		Smilax, p. dz. trails	1 6 2 6	

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Ampelopsis Veitchii, per dozen	6 0 8 0		Crotons, per dozen	12 0 30 0	
Aralia Sieboldi, dz.	4 0 6 0		Cyperus alternifolius, dozen	4 0 5 0	
— larger	9 0 12 0		— laxus, per doz.	4 0 5 0	
Araucaria excelsa, per dozen	12 0 30 0		Dracenas, per doz.	9 0 24 0	
Aspidistras, green, per dozen	1 4 30 0		Euonymus, per dz.	4 0 9 0	
— variegated, dz.	30 42 0		Ferns, in thumbs, — in small and large 60's	7 0 10 0	
Asparagus plumosus nanus, doz.	9 0 12 0		— in 4's, per dz.	16 0 25 0	
— Sprengeri, dz.	9 0 12 0		— in 3's, per dz.	10 0 18 0	
— tenaximus, per dozen	9 0 12 0		Ficus elastica, dz.	8 0 10 0	
Boronia megastigma, per dz.	12 0 30 0		— repens, per doz.	4 0 6 0	
— heterophylla	12 0 21 0		Fuchsias, per doz.	4 0 8 0	
Calceolarias, yellow Campanulas, p. dz.	4 0 8 0		Heliotropiums, per dozen	3 0 4 0	
Clematis, per doz.	8 0 9 0		Hydrangea Thos. Hogg, per doz.	12 0 18 0	
— in flower	12 0 18 0		— Hortensia, per dozen	8 0 12 0	
Cocos Weddelliana, per dozen	9 0 14 0		— paniculata, per dozen	12 0 30 0	
Coleus, per dozen	2 0 4 0		Kentia Belmoreana, per dozen	12 0 18 0	
Coreopsis, per doz.	6 0 10 0		— Fosteriana, p. dozen	12 0 21 0	
Crassulas (Kalo-anthes), per dz.	9 0 12 0				

Plants in Pots, &c.: Average Wholesale Prices (Contd.)

	s.d.	s.d.		s.d.	s.d.
Kochia scoparia, per dozen	6 0 9 0		Pelargoniums, 13-leaved, Mac. crasse and tricolor, dozen	4 0 6 6	
Latania borbonica, per dozen	12 0 18 0		— Zonalis, per dz. show	4 0 6 0	
Lilium longiflorum, per dz.	12 0 24 0		Petunias, double, per doz.	4 0 8 0	
— lancifolium, per dozen	12 0 18 0		— <i>inb.</i> , per dz.	3 0 6 0	
Lily of the Valley, per dozen	10 0 12 0		Rhodanthes, per dz.	4 0 6 0	
Lobelia, per dozen	5 0 6 0		Roses, H.P.'s, dz.	12 0 24 0	
Marguerites, white, per dozen	4 0 8 0		— Ramblers, each	5 0 21 0	
— <i>var.</i> , per doz.	12 0 18 0		Selaginella, dozen	4 0 6 0	
Magnonette, per dozen	6 0 9 0		— <i>Veronica</i> , Mass.	5 0 8 0	
Musk, per dozen	4 0 5 0		— Willmott, doz.	4 0 6 0	
			Zinnias, per dozen	5 0 6 0	

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples, per box, Tasmanian	10 6 11 6		Melons, Guernsey, each	0 9 2 6	
— Sturmer Pippins	9 0 10 0		— French, Rock, each	2 6 3 0	
— French Crabs	1 2 1 4		— Valencia, per case	6 6 8 6	
Apricots (French), per box	2 0 2 6		— Cantaloupe, each	0 3 0 4	
— French, cases	3 6 5 0		Nectarines (English), per doz.	8 0 12 0	
Bananas, bunch: No. 2 Canary	5 0 —		— 1st quality	2 0 4 0	
— No. 1	5 6 6 0		— 2nd	1 3 1 6	
— Extra	6 6 7 6		Nuts, Cobnuts, per doz.	2 6 3 0	
— Grants	8 0 —		— Almonds, bag 50 lb.	4 0 4 0	
— Jamaica	5 0 5 6		— Brazil, new, per cwt.	40 0 42 6	
Cherries (English), 1st quality	3 6 9 0		— <i>Barce</i> , bag 100 lb.	32 6 —	
— 2nd	2 0 5 0		— Cocoa nuts, 100 lb.	12 0 17 0	
— <i>Crabtree</i> , case	8 0 8 6		Oranges, per case: Valencia	18 0 30 0	
— <i>Crabtree</i> , English, Red, 1/2 sieve	2 6 3 6		— Navel, 100 lb.	10 0 16 0	
— Black, 1/2 sieve	4 6 5 0		— <i>Morocco</i> , box 100 lb.	10 0 14 0	
— White, p. peck	2 0 2 6		Peaches (English), per dozen	6 0 9 0	
— <i>White</i> , p. peck	2 6 —		— 1st quality	10 0 3 0	
Figs (Guernsey), p. dozen	1 0 3 0		— French, p. box	1 3 1 6	
Goswories (English), 1/2 sieve	1 6 3 0		Pears (Australian), p. box	10 0 20 0	
Grape Fruit, case 11 6-13 0			Plums (English), 1/2 sieve	3 0 4 0	
Grapes (English), Hambro's, p. lb.	0 6 1 0		— French, p. box	0 10 1 0	
— Alicante, per lb.	0 8 1 0		— French, 1/2 sieve	4 0 9 0	
— Gros, Maroc, per lb.	0 9 1 3		— Italian, basket	1 6 1 9	
— English, Muscats, per lb.	0 9 2 6		— French, 1/2 sieve	4 6 8 0	
— Canon Hall, per lb.	2 0 4 0		Pineapples, each	2 0 3 6	
— Belgian Hambro's, per lb.	0 6 0 9		Raspberries (English), basket, handle	1 0 1 6	
Lemons: Messina, case	10 0 14 0		— English, p. dz. punnets	2 6 4 0	
— Naples, per case	18 0 23 0		Strawberries (English), per peck	1 9 3 0	
Lychees, per box	1 0 —		— per lb.	0 3 0 9	
Mangoes, per doz.	6 0 12 0				

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes (French), per dozen	2 0 2 6		Mushrooms (house), per lb.	0 8 0 10	
Aubergines (French), per doz.	1 0 1 3		— buttons, per lb.	0 10 —	
— Beans (French), per pad	3 0 4 0		— Broils, p. lb.	0 5 0 6	
— Broad (English), p. bushel	3 0 —		Mustard and Cress, per dozen pun.	1 0 1 6	
— Jersey, per lb.	0 6 —		Onions (Lisbon), case	6 0 7 0	
— French, jacket	0 3 0 4		— pickling, per bushel	2 0 2 6	
— Home-grown, per lb.	0 6 —		— Spring, pr. dz. bunches	1 6 2 0	
Beetroot, bushel	1 3 1 6		— Egyptian, bag	8 0 8 6	
Cabbages, per doz.	0 9 1 0		Peas (English), per bushel	1 6 2 6	
Cabbage Greens, bag	1 0 1 6		— English, p. lb.	2 6 4 0	
— red, per dozen	2 0 —		Parsley, 12 bunches	1 6 2 0	
Carrots (English), dozen bunches	1 0 1 6		— 1/2 bushel	1 0 1 6	
Cauliflowers, p. dz.	2 0 2 6		Potatoes (Canary), per cwt.	8 0 9 0	
Chow Chow (Sichuan edule), p. dozen	3 0 —		Radishes (Guernsey), per dozen	0 4 0 6	
Cucumbers, per dozen	1 6 2 6		— <i>Salsify</i> , p. dz. bulbs	3 6 —	
Endive, per dozen	1 3 1 6		Spinach, English, per bushel	0 9 1 0	
Horseradish, foreign, per doz. bundles	13 0 14 0		Tomatoes: — French, p. crate	3 0 3 6	
Leeks, 12 bundles	1 6 —		— selected, per dozen lbs.	3 0 3 3	
Lettuce (English), Cos, per score	0 4 0 6		— small selected, per dozen lbs.	2 6 2 9	
Marrows (English), per dozen	3 0 6 0		— <i>Tomato</i> , English, doz. bunches	2 0 3 6	
Mint, doz. bunches	0 9 1 0		Watercress, per doz. bunches	0 4 0 6	

REMARKS.—Tasmanian Apples are now nearly finished, Sturmer Pippins being almost the only variety obtainable. French Plums are arriving in very fine condition. Home grown Early Rivers Plum is also seen from the Kent district. English hot-house Grapes are very plentiful and prices for this fruit are low. P. L., Covent Garden Market, July 31, 1907.

POTATOS.

Kents, 3s. 6d. to 5s.; Bedford, 3s. 6d. to 4s. 3d.; Lincoln, 3s. 6d. to 4s.; Blacklands, 3s. to 3s. 6d. Supplies are large and the demand is fair. Prices must fall considerably unless the supply moderates. Trade generally is unsettled owing to the holidays. J. D. C., Covent Garden, July 31, 1907.

COVENT GARDEN FLOWER MARKET.

For the next eight months the market will be open on Tuesdays, Thursdays, and Saturdays only. The past has been a very poor season for many market plant growers, some of whom still have large stocks on hand. *Campanula isophylla* alba, and *C. Mayii* are seen from several growers in good condition. *Coreopsis* is very pretty. *Zinnia elegans* flore pleno can be had in many colours; this is a recent addition to flowering plants in Covent Garden Market. *Lilium longiflorum* is over plentiful at present, but the supplies may fall off at any time. *Hydrangea paniculata* is seen in plants of various sizes, and with fine heads of bloom. One buyer was complaining this morning that he found it difficult to procure good hybrid Perpetual Roses in pots. The best plants are consigned direct to the florist; many other choice plants are not sent through the market. Among "Zonals," *Helargoniums* are very inferior plants. Supplies of show and Ivy-leaved varieties hold out well. *Fuchsias* in well-flowered plants are seen on several stands. Most growers have finished with *Mignonette* for the season. *Spiræa japonica* is well flowered. *Marguerites* with both white and yellow flowers are abundant. *Verbena* Miss Willmott is a conspicuous plant in the market. Ferns, Palms, and other foliage plants are well supplied.

CUT FLOWERS.

Supplies of most subjects are over abundant. Sweet Peas have been the most plentiful, and it has been almost impossible to sell these at any price. I have never seen *Lily of the Valley* offered so cheaply as at closing time in the market this morning (Wednesday). Supplies of *Liliums* exceed the demand. I learn that several market growers are building new houses for the culture of Carnations, so that one may expect the prices for this flower to drop still further. Blooms of *Souvenir de la Malmaison* varieties, owing to excessive supplies, have not been so valuable this season. Roses are cheap. Asters are now coming from French growers in large quantities. Other prominent flowers on the stands are *Alströmarias*, *Stephanotis*, *Gardenias*, *Tuberose*s, also *Gypsophila paniculata*, *Chrysanthemum maximum* and the varieties known as the *Shasta* Daisies; *Coreopsis grandiflora*, *Echinops*, *Gaillardias*, *Achillea*, *Poppies*, *Stocks*, and various other hardy flowers. *Orchid* bloom is rather scarce. *Statice* bloom, in white, blue and yellow colours, is now at its best condition. All kinds of cut foliage is well supplied, but prices do not vary greatly. Some growers clear their stocks of *Adiantum* Fern at closing time for very low prices. *A. H.*, Covent Garden, Wednesday, July 31, 1907.

Obituary.

GEBHARDT SUMMERMEYER.—The death of this gardener at the age of 76 years is announced in the German horticultural journals. He began his gardening career in Nathusius' nursery at Althaldensleben, in Saxony, and after serving in various gardens, he became head gardener to Count Stolberg, at Dönhofstedt, East Prussia. By his efforts the cultivation of hardy fruits in that part of the German Empire was greatly extended, and new methods and valuable varieties were introduced. It is to him that the province is indebted for such remunerative sorts of berried fruits as the red Dutch Currant and Hornet Raspberry, and for the wide distribution of Nathusius' Taubenapfel (Dove Apple), a variety of excellent quality. He had held his post at Dönhofstedt for the long period of 42 years.

GEORGE WARD.—The death of this well-known gardener, in his 73rd year, occurred at Bishop's Stortford, on July 13, from an attack of pneumonia. Deceased was a very successful cultivator of Grapes, and he gained many prizes for this fruit in London and the provinces. He was equally successful in the culture of Melons, and *Eucharis* was also one of his specialities. It is interesting to record that the well-known Grape Gros Maroc was first placed on the market consequent on his keenness of observation. He detected this particular Grape in Messrs. Rivers' nurseries at Sawbridgeworth, and it was at his instigation that it was introduced into commerce. As a judge at horticultural exhibitions the deceased's services were in request, and just before his decease he was appointed to judge the allotments and gardens in connection with the show of the Bishop's Stortford Horticultural Society, of which organisation he was one of the founders. Mr. Ward was the patentee of a trough, that bears his name, for keeping Grapes. Deceased, who retired from active service some few years ago, leaves one daughter.

ANSWERS TO CORRESPONDENTS.

ASPARAGUS STEM FLATTENED: *S. G. B.* The specimen you send is an example of a fasciated stem—a not uncommon condition seen in Asparagus. The abnormality is caused by the fusion of two or more shoots, but what induces this fusion we are unable to say. Fasciation is common in many plants.

BEECH TREES: *W. MacL.* If the shoots are free from any pest and disease we are inclined to think the failure is caused by the roots of the trees having at length reached a medium which is unsuitable for them.

CULINARY PEA: *Gledstone.* We cannot express an opinion on the immature pods you send us. Forward seeds next season to the Royal Horticultural Society's Gardens at Wisley for trial with standard varieties.

CURRANT BUSHES, &c.: *J. W. S.* The shoots are infested with aphides or green fly. Spraying with a mixture of 1 lb. of soft soap dissolved in 10 gallons of water is recommended, but it would have been more efficacious if performed on the first appearance of the pests. The Rose buds do not show any disease, and appear to have been killed by excessive wet.

ERICAS: *East Sussex.* The Ericas you send include, as you suggest, four varieties of *E. cinerea*, one of the common Ling (*Calluna vulgaris*), and one of *Erica tetralix*. It is no uncommon thing to find several different forms of *E. cinerea* in a comparatively small area, and the same may be said of *Calluna vulgaris* and *E. tetralix*. Nine varieties of *E. cinerea* are cultivated at Kew, and these have purple, very dark purple, rose, deep rose, deep red, bright red and white flowers. Of *E. tetralix*, three varieties, in addition to the type, are grown, one of which has white and another deep red flowers. Whilst of *Calluna vulgaris* there are about 25 distinct varieties at Kew, which differ in habit so greatly that, whilst some grow only several inches high, others are capable of growing 3 feet or more high. The colours of the flowers vary from white to pink and pink to reddish-purple and red. The writer has found seven forms of the Ling growing wild on one hill in Cornwall, with several forms of *E. cinerea*; and in the Scilly Islands a form of the Ling quite moss-like in appearance.

GOOSEBERRIES DISCOLOURED: *O. B.* There is no fungus disease on the berries, but the injury has been caused by red spider when the fruits were very young.

GRAPES: *L. S.* The berries are affected with the "spot" disease. Dust the bunches with a mixture of one part lime and two parts of flowers of sulphur.

HOUSE FOR HALF-HARDY PLANTS: *J. C.* We advise you to build the temperate house with the ridge running from north to south. The bulk of the tender or half-hardy plants cultivated in this country require all the sun and air possible when grown under glass, and by building the house from the north to the south, all parts but the northern end of the building will receive a considerable amount of strong light. The northern end might be used advantageously for the raising of young plants of such species as *Rhododendrons*, &c., which prefer a position of this kind during their early stages, or you might utilise it for the formation of a Fernery. The building should be liberally provided with ventilators, and if possible the roof should be so arranged that part of it may be either entirely removed during the summer months or made in two sections so that the upper lights may be allowed to slide down over those of the lower half. Employ large panes of glass, and let all the woodwork be as light as is considered equal to the strength required.

JUNIPERUS VIRGINIANA: *K & B.* Junipers and Cyresses are very difficult trees to identify in their juvenile stages. *Juniperus virginiana* shows at least three distinct forms between the seedling and the adult stages, and each form differs from the others as much as many species do. Therefore the identification of small twigs of young Junipers and Cyresses without cones is necessarily more or less speculative.

NAMES OF PLANTS: *J. M.* *Saponaria Vaccaria*—*R. H. A.* *Tecoma jasminoides*.—*J. I. M.* *Spiræa chamædrifolia*.—*W. G.* 1, *Orchis pyramidalis*; 2, *Habenaria bifolia*.—*J. E. M.* 1, *Nephrolepis exaltata*; 2, *N. e. Westonii*; 3, *N. e. Fosteri*; 4 and 5, *N. e. Piersonii*; 6, *N. davallioides*.—*W. T.* *Collomia grandiflora*.—*Felix.* 1, *Brassia brachiata*; 2, *Oncidium Limminghei*; 3, *Cœlia*

Baueriana; 4, *Ionopsis utricularioides*; 5, *Oncidium triquetrum*; 6, *Aerides virens*.—*Inquisitor.* 1, *Polemonium cœruleum* (not a *Geranium*); 2, *Heuchera sanguinea*; 3, *Centaurea macrocephala*; 4, *Achillea Ptarmica flore pleno*.—*Miss G. C.* We do not undertake the naming of garden Roses.—*Foreman.* 1, *Pteris longifolia*; 2, *Pteris tremula*; 3, *Selaginella umbrosa*; 4, *Adiantum assimile*; 5, *Pteris arguta*; 6, *Asplenium lucidum*.—*E. B.* 1, *Inula glandulosa*; 2, *Aconitum Napellus*; 3, *Clematis vitalba*; 4, *Veronica Andersonii* variegata.—*W. L.* *Orchis conopsea*, common in some districts.

ONION: *A. A. & Sons.* These are known in Covent Garden Market as the Small Globe Silver skinned Onions.

PEA FOR NAMING: *J. P.* The variety appears to be a seedling raised from Lord Anson's Pea, *Lathyrus magellanicus*, after crossing with some white flowered edible variety. It differs from Lord Anson's variety in its vigour of growth, greater substance in the inflorescence, its agglomerate character, and the colour, which is the faintest blue and white, whereas Anson's is bright deep blue.

PEARS CRACKED: *L. S.* The cracking is caused by a fungus—*Fusicladium pirinum*. Drench the trees with a solution of sulphate of iron during the winter, and when the leaves and flower buds begin to expand spray with Bordeaux mixture, and repeat this when the petals are falling and again when the young fruits are the size of Peas or slightly larger. The *Aspidistra* leaves are attacked by thrips and red spider. Use a suitable insecticide, and exercise care in the affording of water to the plants. Your Grapes have the "spot" disease. See reply to *L. S.*

POTATOS DISEASED: *R. L. P.* and *A. S.* The tubers are affected with the "warty" disease, or "black scab." Mix some sulphur in the soil before planting Potatoes on the same ground. In any case Potatoes should not be planted on the same land two years in succession when disease, such as "black scab," has appeared.

ROSE ORANGE RUST FUNGUS: *J. S.* See reply to *D. Bros* in our last issue, p. 80.

STALKED EGGS: *W. E.* The very pretty stalked bodies are the eggs of the Lace-wing fly—*Chrysopa perta*.

TOMATO DISEASED: *W. G. & S. A.* The fruits are attacked by a fungus, *Macrosporium Solani*. You can do nothing to save fruits that are already infested, but the fungus may be prevented from spreading by spraying with the Bordeaux mixture. The colourless patches in one of the fruits points to a lack of potash in the rooting medium.

TOMATO SEEDS: *H. C.* Place the seeds together with as little of the pulp as is possible in a box containing dry, fine sand. Rub the sand and the seeds together, and afterwards sift the whole over a wire mesh of sufficient gauge to retain the seeds but not the sand. Next spread out the seeds to dry, and if they are afterwards shaken together, any sand adhering will become detached and leave the seeds almost clean.

TWELVE BUNCHES OF HARDY HERBACEOUS FLOWERS: *L. C.* *Lilium candidum* is certainly an herbaceous plant, and in the south of England it is perfectly hardy. The schedule of rules for judging issued under the auspices of the Royal Horticultural Society reads:—"The schedule should say distinctly excluding Lilies and other bulbs, corms, and tubers, if it is desired to exclude them; and if such words are not added, it must be understood that bulbs, corms, and tubers are, for garden purposes, included in the term herbaceous plants."

COMMUNICATIONS RECEIVED.—*E. W. K. & Co.* (the flowers have not arrived).—*W. R. P.*, *G. B. M.*, *H. C.*, *X. Y. Z.*—*W. Smith*—*R. H.*—*F. L.*—*F. O. W. McD.*—*J. C.*—*Nympha*—*T. & Son*—*G. G.*—*T. S. C.*—*J. G. W.* (with thanks)—*Derby*—*F. O.*—*P. A.*—*J. C.*—*B.*—*A. T. B.*—*W. H. W.*—*E. A.*—*C. J. G.*—*J. W.*—*E. H.*—*J. V.* & *Sons*—*W. G. B.*—*J. C.*—*Miramir*—*R. B.*—*V. O.*—*I. H. D.*—*A. P.*—*W. Gumbleton*—*A. J. S.*—*G. H.*—*A. H.*—*S. W.*—*T. T.*—*R. J. S.*—*B. T. B.*—*T. S.*—*H. S.*—*G. B.*—*T. D.*—*P. M.*—*W. S.*—*F. M.*—*W.*—*S. A.*—*S.*—*E. J.*—*A. A.*—*W.*

THE

Gardeners' Chronicle

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BATTERSEA PARK.

THIS picturesque park in the south-western suburb of London appears at the present time at its best, as regards the lawns and grass areas, its wealth of native and exotic trees, evergreen shrubs, and its extensive borders of flowering perennials. The trees are now putting forth the tender green tints of that second growth which occurs in July, and affords a lively contrast to the universal dark green of the older leafage. Never has arboreal growth been greater than this year, thanks to the over-abundant rains and low temperature of the summer; and in no year has the grass been greener, or caused the mowing machine to be more actively employed.

It may be noted in the central avenue that runs straight through the park for about a quarter of a mile that the Elms are likely to be short-lived; but from what cause is not apparent, unless it be that the soil, much of it "made up" by Gibson, is insufficiently good to sustain healthy growth for an indefinite period. However, other trees were planted in the winter of the present year, and at a few feet further back from the roadway, and thus in positions in which they will obtain much sunshine and the benefits of the

rainfall. By careful attention in preventing them from becoming overshadowed by the older specimens, these young trees should make rapid progress, and in the course of a dozen years or so, it may be desirable to remove those which now show signs of failing health.

The sub-tropical garden is a sheltered parterre, and it still remains the strongest point of attraction at Battersea on account, not alone, of its varied and pleasing undulated surface and irregular outline, but also for the rich furnishing of the many beds, groups and borders. Mr. Rogers, the present superintendent, is a believer in changes of material, and does not plant out the same mixtures year by year in the beds and borders of this garden, but always contrives to afford new combinations, fresh features, and some novelties from out of his multitude of store houses.

Entering the garden from the north, the visitor will remark the many effective beds of Fuchsias now in the finest bloom, some being many-stemmed bushes, 4 to 5 feet in height, and of nearly the same diameter, and the almost universal employment of Violas as undergrowth or borderings in beds where tall plants are set out. These Violas succeed well, as there is no crowding together of the tall subjects, but each is isolated and shows well from whichever side the bed is viewed. Of excellent varieties of Fuchsia, mention should be made of Mcleworth, which has a double, white corolla and scarlet sepals; the undergrowth is a variety of Heliotrope. Marinka is one of the globose, red-flowered dwarf Fuchsias, and has bronzy-green leaves; and in the same bed were the varieties Lady Roberts, Luzon, and Mrs. Marshall, the last-mentioned variety having white sepals and a red-coloured corolla. In the form of pyramids, in another group, were Pelargoniums of the peltatum section, namely, Murillo, Charles Turner, and some seedlings raised in the park. In another bed were the varieties Baden Powell of the same section, and an undergrowth of a variety of Begonia semperflorens. A bed of the old, yet unequalled, Fuchsia Madame Cornellison, had a good effect, as also had Rose of Castile. Fuchsia Crimson Globe made a charming bed, with Heliotropes beneath, as did Fuchsia Amy Lye, with white sepals and scarlet corolla, associated with the variety Mrs. H. Roberts, having a scarlet corolla and pink sepals.

Succulent plants of species have a place in this garden, giant Agaves being mixed with lowly forms such as Mesembryanthemums, Rocheas, Aloes, Yuccas, Sedums, Sempervivums, &c. An imposing group of Melianthus major, 6 feet in height, with an undergrowth of Viola Mrs. Mills, is very effective. Another conspicuous bed consisting of Carnations (Fancy varieties), Pelargonium peltatum, large bush-grown Fuchsias, and columnar plants of Plumbago capensis, with a yellow-leaved Pelargonium as undergrowth, will present an excellent effect after a little more growth has been made.

The pretty Agatheæ cœlestis, together with Lantana Drap d'Or and Albizzia lophantha as solitary plants, and a dwarf Heliotrope beneath, formed an unusual but pretty combination.

Fuchsia Golden Treasure, a double row of which, pinched and layered, as an edging,

had a nice effect. A group of Abutilon Savitzii, Begonia Triomphe de Lorraine (a variety having reddish-bronze leaves and scarlet flowers), together with blue Lobelia employed as an edging, were very fine.

In another part, near the lake-side, plants of Galtonia candicans, English Irises, and Gladiolus Colvillei, will presently have a distinct effect. Solanum Balbisii, planted in a long bed, is growing into good effect, and the red fruits are showing freely on the plants.

The beds on the Queen's Road side of the park are boldly planted with clumps of the pale purple Stenactis speciosa, Pelargonium peltatum, Golden-leaved Privet, Fuchsias, Chrysanthemum maximum, silver-variegated and Zonal Pelargoniums, Violas in variety, and Pentstemons. A group of Prunus pissardii, 5 feet high, and Golden Privet, filled in between with Clarkia integrifolia, and bordered with Hemerocallis subcordata, at once attracted the attention.

Turner's Crimson Rambler Roses, Hollyhocks, and Dahlias of the Decorative section were employed in the large quadrangular bed near the Queen's Road entrance. Hereabouts, double-flowered Poppies, Malvas, Phlox Drummondii, and Collinsias are used in the borders.

The beds near the riverside restaurant are prettily planted with Violas Bridegroom, Ardwood Gem, and Sir R. Fuller (a blue-flowered very beautiful variety), and are well worth an inspection. Begonias Würtembergi, and B. semperflorens magnifica, &c., are the other plants of which use is made.

In the sunken panel parterre the arrangements differ entirely from those of last year. Here the magnificent crimson Zonal Pelargonium Paul Krampel, Ten-week Stocks of robust growth, and Zelia Pelargonium (one of the best), contribute greatly to the effect. Golden Gem, Robert Fish, Verona and Mrs. Mappin Pelargoniums form distinct edgings in this parterre. F.

NEW OR NOTEWORTHY PLANTS.

ODONTOGLOSSUM ARIADNE.

O. NOBILE, ♀ × O. WATTIANUM CRAWSHAYANUM ♂.

THIS is a half-sister, upon the side of the male parent, to Odonoglossum × Astræa, described in the issue for July 20, 1907, p. 42. The sepals are clear yellow, having a small brown blotch at two-thirds distance from their bases. The petals are coloured similarly, slightly lighter towards the bases, having a couple of spots in the same position as that in the sepals. All five segments are otherwise unspotted.

The lip is lighter in tint, having a broad transverse brown blotch on the yellow, just above the crest, where O. nobile is always spotted; its shoulders and channel have small spots and a brown marginal line, which are often present in the female parent. The crest is like that of O. Lindleyanum, slightly more filamentous than in O. × Astræa. The adnation of lip to column plainly shows the influence of O. Lindleyanum, the reniform blade giving evidence of O. nobile.

The column is short and a little up-curved, as in O. nobile, nearly white, the wings being

almost as in *O. Lindleyanum* and slightly spotted. Anther cap light yellow.

This plant is only small, and bore two flowers. It is one of a series of crosses I made with the same male parent, and, compared to *O. x Astræa*, clearly shows the influence of *O. nobile* against that of *O. x Fascinator*, and, through it, that of *O. crispum*. Reversion in this case produces the form of *O. Lindleyanum*, with loss of spotting of the male parent; the white of *O. nobile* assuming the yellow ground colour of *O. Wattianum*. *dc B. Crawshaw.*

NEW SPECIES OF IMPATIENS.

DURING the last few years several new species of *Impatiens* have been introduced to cultivation in this country. The best of these, and certainly the finest plant of the genus now in cul-

position, there is no reason why this species should not be used as a bedding plant when better known. It may be readily raised from cuttings or seeds, the latter of which ripen in abundance.

IMPATIENS HOLSTII (*Gardeners' Chronicle*, July 1, 1905, fig. 7), another recently-introduced species, has speedily become well known in gardens, where it is cultivated both in pots and beds. It is a native of Usambara and Kilimandjara, growing on the banks of streams at altitudes of 2,500 to 5,000 feet, and was introduced into cultivation through the medium of the Berlin Botanical Gardens and the firm of Haage and Schmidt, of Erfurt. The plant closely resembles the well-known *I. Sultani* in its dwarf habit and shape of flowers. It is, however, of much better constitution, and the

panying illustration was eight months old from seed and flowered in an 8-inch pot. As all the seedlings died after flowering and producing seed, there is little doubt but that it is an annual. The flowers are about an inch in diameter, and vary somewhat in colour in the different seedlings from pink to rosy-red or rosy-purple. This species is found abundantly in Ceylon, from the sea level up to 7,000 feet altitude, also on the mountains of Malabar, Canara and the Concan, at altitudes of 3,000 to 5,000 feet. In a recent letter to Kew Sir Joseph Hooker wrote as follows: "I work at the genus *Impatiens* every day and all day. It proves to be an enormous genus, full of most beautiful species. I cannot understand its having been so neglected by botanists, collectors and cultivators." *C. P. R.*



FIG. 40.—*IMPATIENS OPPOSITIFOLIA* IN FLOWER AT KEW.

[Photograph by C. P. Raffill.]

tivation, is *I. Oliveri* (see supplement to the *Gardeners' Chronicle*, October 27, 1906), which was sent to Kew in 1903 from Uganda. It was found to thrive best when given cool greenhouse treatment. The flowers remind one of a *Miltonia vexillaria* in size, colour and shape. It is of floriferous habit, with large, handsome foliage, and a habit that branches freely from the base upwards, causing the plant to form a large and handsome specimen. A single specimen in the greenhouse at Kew at the present time, now about three years old, is more than 10 feet across and 8 feet high, and for the last 2½ years has never been out of flower. When treated as a bedding plant it was found that the flowers lost their pleasing rosy-pink colour on exposure to strong sunshine, becoming almost white. With care in the selection of a suitable

flowers are brilliant scarlet, contrasting well with the light green foliage.

IMPATIENS OPPOSITIFOLIA (see fig. 40).—This species has been known to botanists for many years, but does not appear to have been introduced into cultivation until early in 1906, when seeds were received at Kew (under the name of *I. Dalzellii*, an allied species with yellow flowers) from W. A. Talbot, of Mahabeshwar, India. The plants raised from these seeds grew rapidly under greenhouse treatment, and flowered profusely throughout the months of September and October. Specimens were sent to Sir Joseph Hooker (the authority on the genus), who identified them as *I. oppositifolia*. The species under notice is of very easy culture, of free branching habit, and exceedingly floriferous. The plant depicted in the accom-

TREES AND SHRUBS.

SOME ERICACEOUS SHRUBS.

THE following flowering shrubs are often overlooked in favour of other less ornamental subjects. They all require massing to be properly appreciated, for solitary specimens fail to give a display of flowers or fruits sufficient to show their true character.

PERNETTYA MUCRONATA.

This is a pretty little shrub from the Magellanic region, and a bed of it should be found in every garden, as it is perfectly hardy, and grows well in any soil that does not contain lime in any appreciable quantity. The small, white, bell-shaped flowers are produced singly or in pairs in the axils of the previous year's

growth, and they open early in June. They are followed by red berries, which remain on the plants for the greater part of the winter, and these berries form one of the chief attractions of the plant. *P. speciosa* is usually classed as synonymous with *P. mucronata*, but they differ sufficiently to be separated for garden purposes. In the latter species the leaves are broader and stouter, and the plant is dwarfer and more spreading than in *P. speciosa*, which has a free habit of growth, and rather brighter, narrower leaves. The flowers of both are identical. A number of varieties have received Latin names that describe in each case the colour

The plant is a native of North America, and grows 2 feet or more in height. It is increased by division or by suckers.

RHODODENDRON RHODORA, SYN. RHODORA
CANADENSIS.

This is a deciduous shrub from North America, with slender, upright stems that attain to a height of from 4 to 5 feet with age. The ovate-lanceolate leaves are 2 inches to 3 inches in length, glabrous above and hairy beneath. The flowers are produced in April in terminal clusters, and are of a magenta or purplish-crimson colour, which is very difficult to associate

facturing towns, it is one of the few species that can be relied upon.

It is somewhat curious and interesting that the Elder is also probably the best tree for planting in very exposed seaside situations, and down even to high-water mark, fully exposed to the rough winds from the sea, isolated specimens grow with a luxuriance and freshness that is truly remarkable. No tree is more readily raised from cuttings, is cheaper to procure, or transplanted with greater ease than the Elder. There are several highly ornamental forms of this tree, including the golden, silver, and fern-leaved, and all are equally valuable with the species for general planting.

ULMUS ALATA, THE WINGED ELM.—Considering the ornamental character of this tree, and its capabilities for withstanding the cold in exposed situations, such as on hillsides, it is not planted so largely as its merits warrant. The tree is of small growth, neat in habit, and has peculiar corky excrescences upon its bark. These are regularly disposed on either side of the branches and to such an extent that the smaller twigs look twice their actual size. The species is a native of the Southern United States of America, and, though introduced in 1820, it may still be considered as rare in this country. In Wales I saw it succeeding at an elevation of some 600 feet above the sea level, and where even the hardy Larch was affected by the cold winds of that exposed hillside. Lower down the hillside it was seen in equally good form, and seemed in every situation to be healthy and regularly branched.

THE PINE BEETLE.—This destructive pest of Pine woods would appear to be unusually plentiful this season if one may judge by the numerous specimens of injured wood seen lately. In one instance the trees attacked were isolated from other Pine woods. The only method of dealing with infested plantations is to burn all dead and dying wood, for in this the beetle breeds. A. D. W.

SOLANUM CRISPUM.

This beautiful and free-growing Chilean plant, commonly known as the Potato tree, is generally considered to be but half-hardy, and this belief, no doubt, deters many persons from planting it in the open. *Solanum crispum* is seldom seen in Scottish gardens; but that it is hardy in sheltered positions in Scotland was known as far back as 1841, for the *Botanical Magazine* (t. 3795) of that date records a plant as having flowered at Hafton Gardens, in the Highlands of Argyllshire, where, on a south wall it had reached a height of 14 feet, and had survived the severe winters of 1837-8 and 1838-9.

The species is very robust and free in growing. A specimen planted at the foot of a south-east wall in the Edinburgh Botanic Garden, in 1903, is now nearly 12 feet in height, and since the latter part of June of this year the beautiful bluish-purple and very fragrant flowers have been a conspicuous feature among the dark-green, ovate leaves. The plant requires no special soil preparation, for it grows freely at Edinburgh in a sandy loam. The habit of the plant is climbing, and should a blank wall-space need quickly covering it is specially suitable for that purpose. W. Smith, Edinburgh.

VIEW IN A DONEGAL GARDEN.

WE are indebted to Miss S. M. Wallace for the charming view in an Irish garden, reproduced in fig. 41. The space between the trees affords a fine glimpse of the lough and the hedge-divided fields beyond, while in the background rises a range of hills skirting the horizon. The Rhododendrons and Azaleas, with Solomon's Seal, *Skimmia japonica*, &c., have, in the words of our correspondent, furnished "a gay corner."



[Photograph by Miss Wallace.]

FIG. 41.—VIEW OF AN IRISH GARDEN.

of the berries. The *Pernettyas* are easily propagated by seeds or by division.

LEUCOTHOE CATESBÆI, SYN. ANDROMEDA
CATESBÆI.

This is a plant that may be in full bloom and not be noticed by the casual observer. The stout, arching shoots spring from a common base, and bear white, bell-shaped flowers in short, axillary racemes that point downwards, and which are almost hidden by the leaves. The latter are about 4 inches in length, narrow-ovate in shape, pointed, and finely serrated on the margins. The beauty of the flowers is only seen when the shoots are lifted up, but in June, when they are at their best, they form a welcome addition to the flowering shrubs.

with anything except white. It is a distinct and handsome plant when seen under favourable conditions, and the flowers have the additional merit of looking better under artificial light than they do in the open. Propagation may be effected by layering.

CHEMICAL FUMES AND TREE
GROWTH.

No other tree has been found so suitable for withstanding the deleterious effects of an atmosphere charged with chemical fumes as the common Elder. Several other species of trees succeed fairly well under these adverse conditions, but the Elder succeeds best, and in such a chemically-impure atmosphere as that of Newcastle-on-Tyne, and some other large manu-

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, ante, pp. 84-90.)

O, SCOTLAND, N.

ORKNEYS.—The cold, wet season and a lack of sunshine have spoiled the fruit crops in this district, although the prospects in early spring were excellent. Our soil is a heavy loam on a sub-soil of stiff clay. *Thos. MacDonald, Balfour Castle Gardens, Orkney.*

SUTHERLANDSHIRE.—Up to the middle of July the weather was wet, cold, and sunless in this neighbourhood, and easterly winds caused blight to appear on the young growths of Plum trees. Apple trees blossomed freely, but the fruits set badly, and the Apple crop is in consequence thin. Small fruits are plentiful, and promise to be of average quality, although they will be later than usual in ripening. The soil here is a black, sandy loam, resting on gravel and sand. *D. Melville, Dunrobin Castle Gardens, Sutherland.*

1, SCOTLAND, E.

ABERDEENSHIRE.—All small fruits are an abundant crop, especially Gooseberries and Currants, but they will be later than usual in ripening. Apples are a moderate crop only, although I never saw the trees look better than when they were in bloom. *James Grant, Rothienorman Gardens, Rothienorman.*

—A fine show of blossom on all fruit trees early in the season promised grand crops, but the abnormal amount of rain, together with cold, dull weather from the middle of May until the middle of July destroyed our hopes. Apples and Pears will be few: Plums in some gardens promise an average crop. Strawberries are much under the average, but other small fruits are abundant. Up to the time of writing we have had only 10 days of summer weather. *John Brown, Delgaty Castle Gardens, Turrieff.*

BANFFSHIRE.—Fruits of all kinds set remarkably well this season, as the spring here was almost entirely free from frost. But the rains and cold winds during the latter part of May and throughout June partly spoiled the crops, which are about three weeks later advanced than in most seasons. A few weeks of good weather would ensure crops of fruit well over the average in quantity. *George Edwards, Ballindalloch Castle Gardens, Ballindalloch.*

BERWICKSHIRE.—Apple trees early in the season gave promise of an abundant crop of fruits, but continuous cold rains prevailed during May and June whilst the trees were in bloom, and the fruits did not set. Early Strawberries were also a light crop. The first blossoms were destroyed and turned black from the excessive damp and cold weather. Later varieties, however, such as Monarch and Leader, are bearing heavy crops, and the variety Elton Pine promises well. Plums and Cherries on walls, that were protected by nets, &c., are bearing splendid crops. Gooseberries, Raspberries, and Currant bushes are all heavily laden with good fruits. Our soil is a heavy red loam on clay, and the crops in this district are always late. *Robert Stuart, Thirlestane Castle Gardens, Lauder.*

EAST LOTHIAN.—Apples are a variable, but, on the whole, an average crop, and the same may be said of Pears. Stone fruits have seldom set more freely, and this entailed much labour in their thinning. The crops of Gooseberries and Currants are phenomenal, and the weight of the fruits have in some cases damaged the bushes. Royal Sovereign Strawberry furnished a large crop and late varieties promise well, but the maincrop varieties are a failure, owing to a deficient rainfall, and this has caused the Strawberry crop to be below the average. Raspberries, Wineberries, and Logan berries are all promising well. All kinds of fruit trees exhibit health, and have clean, robust foliage. *R. P. Brotherton, Tynninghame, Prestonkirk.*

—The Apple crop in this district is very good, and the fruits promise to be of good quality. Some are already highly coloured, and all are swelling freely. Pears, especially in the case of early varieties, are under an average crop. The trees were exposed to late frosts and cold winds whilst in flower. Plum trees developed an enormous quantity of blossom, but the fruits did not set well, and, save in the case of the variety Victoria, Plums are not more than

an average crop. Peaches and Nectarines are exceptionally good. Apricots are also good, but the crop of these fruits is small. Bush-fruits are very plentiful, but in some places near here Raspberries have been damaged by the caterpillar of the Raspberry moth and Black Currants by the Currant-bud mite. Strawberries promised well, but the recent wet, cold weather has caused mildew to appear, and the berries are not swelling freely. The crops in general are from 10 days to a fortnight late this season. The soil here is a light sandy loam, with a subsoil of almost pure sand. *William Galloway, Gosford Gardens, Longniddry.*

FIFESHIRE.—The fruit crops, with the exception of small fruits, are almost a failure in this district. The weather was exceptionally cold and wet, with frost at night time up to the middle of July. *William Henderson, Balbirnie Gardens, Markinch.*

FORFARSHIRE.—Apples and Pear trees developed an abundance of blossom, but owing to the prevalence of rain and an entire absence of sunshine during the time they were in flower the fruits set badly. Those that did set are late and small. Many of the trees have become blighted, their growths stunted and in some cases the foliage is dropping prematurely. Small fruits are an average crop, but they will be three weeks later in ripening than usual. *Thos. Wilson, Glamis Castle Gardens.*

KINCARDINESHIRE.—There was a magnificent show of blossom on all our fruit trees this season, but the result is somewhat disappointing. The whole of the time the trees were in flower the blossoms were always wet, and especially was this the case in respect to Apples. The weather was also very cold, consequently there were no bees or other insects about to pollinate the flowers. The only variety of Apple carrying more than an average crop is Cellini Pippin, and this kind always does well here. Our soil is very light in texture, the subsoil being gravel. All fruits are very backward, and it is too early at this time to form a correct opinion on their quality. *John M. Brown, Blackhall Castle Gardens, Banchory, Aberdeen.*

MIDLOTHIAN.—Apple trees in the early part of the season promised to furnish fruit in abundance, but with the continuous rains and low temperature later the fruits set very badly. Standard trees of the varieties Lord Grosvenor, Jas. Grieve, Warner's King, Irish Peach, and Worcester Pearmain have large crops, but most of the other varieties of Apples are nearly a failure. Fruit trees trained against walls are bearing good crops. *Wm. G. Pirie, Dalhousie Castle Gardens, Bonnyrigg.*

—The first months of the year were cold and sunless, and fruit trees, more than usually furnished with flower-buds, were late in blooming. A short spell of very fine weather at the end of March caused good "sets" of small fruits and of the earliest varieties of Apples. The cold and sunless weather that followed March, and continued until the beginning of July, spoiled what promised to be a very fruitful season, and our crops are rather under the average. The soil is a light, sandy loam on a subsoil of gravel. *James Whytock, Dalkeith Gardens, Dalkeith.*

PEEBLES—The fruit crops in this district are a distinct improvement on those of the past three years. Small fruits are plentiful, and good in quality, but Strawberries are disappointing, considering the great promise they gave when in flower. The long spell of sunless, wet weather and cold nights prevented the fruits from swelling, and mildew has caused much loss in the variety "The Laxton." Apple trees on the walls are carrying a fine crop of good fruits, but Apples are rather scarce on standard trees. Plums and Cherries are both large crops, and the fruits promise to be of good quality. Our soil is a good loam on a gravel subsoil. *William Young, Stobo Castle Gardens, Stobo.*

PERTHSHIRE.—Late-flowering Apple trees in this district have very poor crops, owing to the wet, cold weather destroying the blossoms. Early varieties of Apples promise to be a good crop. Plums are very plentiful in this district. Peaches, Nectarines, and Apricots are all good crops, but the fruits will be a fortnight late in ripening. Gooseberries are very abundant; also Currants and other small fruits. The soil in this district is mostly a heavy loam. *J. Farquharson, Kinfauns Castle Gardens.*

6, SCOTLAND, W.

ARGYLLSHIRE.—In the spring there was a great promise of all fruits. Apple, Pear and Plum trees had a profusion of blossom, but promises of a good crop have not been fulfilled. In some cases Pear blossom was so abundant that a severe thinning of the flowers was carried out, but, after all, the fruits set badly, and on some Pear trees there is not a single fruit. Morello and Sweet Cherries flowered in remarkable profusion, but many of the fruits dropped off at the stoning period. On the morning of April 18 we had a sudden and disastrous frost, as much as 10° was registered—fortunately the conditions were dry. Peaches set well, there has been very little "blister" disease on the foliage, and the fruits promise to be plentiful and good. Strawberries have cropped splendidly, and the berries were of high flavour. The wet weather has suited Black Currants, which are very good in quality and abundant. Raspberries never fail here, and both Brambles and Loganberries promise well. Gooseberries are good. The recent weather has improved all crops wonderfully. In June 5.13 inches of rain were registered. *D. S. Melville, Pollallock Gardens, Lochgilphead.*

AYRSHIRE.—The cold, wet weather during May and June spoilt what would otherwise have been a good Strawberry year, but only those planted on south borders have yielded satisfactory crops. Currants, Gooseberries, and Raspberries are good average crops, but three weeks backward. Some Apple trees are carrying plentiful fruits, but, generally, the Apple crop is not above the average. Plums on wall trees are abundant, but standard trees are carrying thin crops. Our soil is a heavy loam, and the gardens are in a low situation. *W. Priest, Eglinton Gardens, Kilwinning.*

—All kinds of fruit trees promised abundant crops in the beginning of the season, and with the almost entire absence of frost in April and May a first-rate setting of fruits resulted. The month of June, however, was cold, wet, and sunless, and this caused the fruits of late varieties of Apples, Strawberries, and Raspberries to cease swelling for the time. Good results, nevertheless, appear likely to follow. *D. Buchanan, Bargany Gardens, Dailly.*

DUMBARTONSHIRE.—Red and Black Currants are excellent crops, but Raspberries suffered considerably from cold East winds when the flowers were expanded. Strawberries are a good crop, and the quality improved owing to the sunshine early in July. Our soil is shallow and on a cold subsoil, being very unsuitable for the culture of Apples and Pears. *D. Stewart, Knockderry Castle Gardens, Cove.*

DUMFRIESSHIRE.—Another bad fruit year has to be recorded in this district. Apples, Pears, Cherries, Peaches, Nectarines, Apricots, and small bush-fruits are decidedly under the average in quantity and the quality is very inferior. Plums, Strawberries, and Raspberries are average crops. The climatic conditions during June and the first half of July were so unusually adverse, that little hope can now be entertained of hardy fruits maturing so as to give anything like a remunerative return. Heavy rains and severe hailstorms were very frequent during the month of June, and the temperature was very low both by day and night. On the 10th, 18th, and 25th of that month we experienced 2, 3, and 1 degrees of frost respectively. Our rain gauges showed 6.5 inches of rain for June. *John Mackinnon, Terregles.*

—Small fruits are average crops, Red Currants and Raspberries being the best. Strawberries are good on young plantations, but the berries on older plants are small. Apples are a poor crop; the trees have an unhealthy appearance, especially those bush-trained, and many leaves have shrivelled and fallen off. Pears are always a poor crop here, owing to the soil being light, with sand and gravel underneath. Cherries, and especially Morellos, are looking very well. This has been a very trying year, and will long be remembered. The season is very late, and plants have made very little growth. *Jas. Macdonald, Dryfeholm Gardens, Lockerbie.*

RENFREWSHIRE.—Owing to the cold and wet weather in May and June, the fruit crops in this locality are very deficient. Strawberries are very backward and small in size. Our soil is of a light texture on a sandy subsoil. *Thomas Lunt, Ardgowan Gardens.*

WIGTOWNSHIRE.—Apple trees flowered abundantly, but owing to an almost continual rainfall at the time of blossoming, the fruits failed to set. The trees at the present time present a very unhealthy appearance. Pears are fairly plentiful in the case of young trees, but many of those of older growth are fruitless. Cherries of all kinds are almost a failure, even Morellos. Peaches, Nectarines, and Figs are plentiful, and promise to ripen well. Small and bush-fruits are generally abundant and of good quality. Our soil is a good, somewhat heavy, loam, resting upon a substratum of gravel or rock, from which water easily escapes. *James Day, Galloway House.*

2, ENGLAND, N.E.

DURHAM.—All trees had an abundance of blossom, but, owing to the cold rains, Apples did not set well. Strange to say, Plums are above the average. Our fruit trees are not pruned. The soil is limestone. *R. Draper, Seaham Hall Gardens, Seaham Harbour.*

YORKSHIRE.—The early promise of hardy fruit crops was excellent, but the fruits failed to set, owing to low temperatures, cold rains, and sunless weather in May and June. *J. Simpson, Studfeld House, near Sheffield.*

— Apples, with very few exceptions, are a heavy crop. Pears are an average crop. Plums are an exceptionally heavy crop. Strawberries suffered very severely during the wet month of June, and the only satisfactory crop was from the variety Royal Sovereign. Raspberries are very good, and small fruits generally are above the average. The soil here is a good loam 2 feet in depth, resting on a layer of clay, beneath which is a gravel subsoil. Fruit trees succeed well in this district. *J. E. Hathaway, Baldersby Park, Thirsk.*

— As a result of the fine summer and autumn of last year, all fruit trees showed an abundance of blossom. Much of this was destroyed by frost and cold winds, especially on Apple trees, hence the present poor crop on old and exposed trees, but young trees seem better able to withstand the effects of cold. Bush fruits are plentiful and very good. Strawberries suffered from drought last year, and made a weak growth. Early kinds of Potatos are not very satisfactory, but they have much improved with the advent of warmer weather. Late Potatos promise well. All crops this season are about three weeks later than usual. The soil is a rather strong loam resting on clay over chalk 150 feet above sea level. *John Allsop, Dalton Hall Gardens, Dalton Holm, Beverley.*

— There was an abundance of blossom on all fruit trees, but the continuous wet and sunless weather prevented the fruits from setting. These adverse climatical conditions continued until the beginning of July, hence all fruits are backward. Gooseberries are very abundant. Strawberries were injured by the rains. Generally, the older varieties of Apples and Pears are bearing the heaviest crops. The soil varies from a stiff loam, resting on limestone, to lighter loams on the edge of the great alluvial plain of York. Troublesome insects are this season less prevalent than usual. *Henry J. Clayton, Wharfe Bank House, Ulleskelf.*

— Apples are a very thin crop, especially on old trees; young trees of Lane's Prince Albert, James Grieve, Cox's Orange Pippin, Adams' Pearmain, Irish Peach, and Grenadier have the most fruits. Pears are very scarce. Plum trees are very heavily cropped, especially the variety Victoria. Damsons are also a very heavy crop. All bush fruits are good. Strawberries are very late in ripening, and there is only half a crop of these fruits owing to the recent long spell of wet, cold weather. Apricot trees are carrying very heavy crops. *A. E. Sutton, Castle Howard Gardens, Welburn.*

3, ENGLAND, E.

CAMBRIDGESHIRE.—The soil here is very light, consequently the recent rains have done much good to all crops except Strawberries. Many of these fruits rotted on the plants before ripening. The Peach, Nectarine, and Plum crops are all excellent. Apples in some cases have set too thickly, so that the quality of the fruits cannot be good. *R. Alderman, Babraham Hall Gardens, Cambridge.*

— Considering the dull, sunless weather experienced recently, the hardy fruit crops are

promising fairly well, Peach, Nectarine, Morello and Sweet Cherry trees have been very much infested with green and black aphid and red spider. Trees of Jefferson and Greengage Plums that were root-pruned last autumn, also Kirk's and Coe's Golden Drop, are carrying fair crops of fruit. If we get several weeks of sunshine, and a fine autumn, the fruit crop will be much benefited. Our soil is a strong loam resting on clay. The average rainfall for the year in these gardens is 20.25 inches. *T. W. Birkinshaw, Hatley Park Gardens, Gamlingay.*

ESSEX.—This season promised to be a record one for fruits of all description in these gardens, but the continuous cold and sunless weather has destroyed the crops. In the case of Strawberries, a large number of the early berries rotted before ripening. But the crop was a heavy one, and with the recent fine weather the latter fruits ripened, and on the whole the yield has been a good one. Aphid, both green and black, have been very troublesome on Apple and Cherry trees. The Apple crop will neither be heavy nor good, from this cause. Pears, Apricots, Peaches, Nectarines, and Plums are particularly good. A free growth of wood in fruit trees generally has been made. The soil is a stiffish clay. *Arthur Bullock, Copped Hall Gardens, Epping.*

— Established trees of such varieties of Apples as Hambling's Deux Ans and King of the Pippins, which last year bore 19 bushels and seven bushels of first-rate fruit respectively, are this year, as is usually the case the season following a bountiful crop, quite bare of fruit. This I attribute to the trees having become exhausted in the developing and ripening of such heavy crops of fruits as to prevent them from expanding any blossoms in the spring. A specimen of Norfolk Beefin is the only established Apple tree that has a fair crop of fruit this year, but young maiden Apple trees, which last summer and autumn made no wood-growth, but formed plenty of plump, well-ripened fruit-buds, have set good crops of fruits. The soil is a sandy loam resting on a bed of clay; the ground slopes to the south. *H. W. Ward, Lime House, Rayleigh.*

LINCOLNSHIRE.—Notwithstanding the wet and cold weather, there are good crops of Peaches, Nectarines, Apricots, and Plums, especially the variety Victoria. Strawberries were greatly injured by rains; many have rotted, and generally the berries are a bad colour and poor in flavour. Apples are a short crop notwithstanding there was a fair quantity of blossom, but it was small and weak and failed to set. Pears are a rather better crop than that of last year; the trees had a wealth of blossom, but the blooms suffered from a sharp frost after a cold rain. We need plenty of sunshine to bring the crops to perfection. Our soil here is a brown loam on a blue clay or ironstone subsoil. *H. Vinden, Harlaxton Manor Gardens, Grantham.*

— Considering the cold, wet spring and early summer, Apples are a fair crop; the variety Blenheim Pippin is very promising. Pears are an average crop, but Cherries are very scarce. Nectarines and Peaches are excellent. Apricots are also very fine fruits this season. Pear, White, and Black Currants are plentiful. Gooseberries are a very heavy crop of large fruits, and the Loganberry is excellent. I consider this latter is one of the most reliable of fruits. Raspberries are abundant, and the fruits are very large. Strawberries have been an average crop of good fruit. Walnuts and small nuts are scarce. Taking the fruit crops generally, the season is one of the best for many years. The soil in this district is very heavy, on a cold, clay subsoil. *F. J. Fleming, Weelsby Old Hall Gardens, Grimsby.*

— The soil in these gardens is a heavy clay, but the borders have been specially prepared for the planting of Pears, Apricots, Peaches, and Nectarines at the foot of walls. Of Strawberries, Royal Sovereign is almost the only variety which does well with us. A severe hailstorm on July 2 badly marked the exposed Apples and many Nectarines on a south wall. A bad attack of caterpillars infested the trees early in the season. The extremes of temperature experienced between the early summer months and the past few weeks have proved a great check to Apple trees, and, in consequence, many of the fruits have dropped, together with some of the foliage. *F. C. Stainsby, Brocklesby Park Gardens.*

— The soil here is of a light sandy nature, and rests on a bed of white clay; these conditions do not suit the Apple, and after the trees have been planted about 20 years they gradually die, but they produce fairly good crops whilst they are young. Small fruits, and especially Currants, do remarkably well here. Nuts are quite a failure this year, owing to the cold weather. *F. Barton, Hainton Hall Gardens.*

NORFOLK.—Apples set well, but lately they have dropped badly. Amongst small fruits, Raspberries, Red, White, and Black Currants are plentiful, but Gooseberries are a much lighter crop than last year. Plum trees blossomed well, but the young fruits dropped freely. Walnuts are quite a failure this year. *J. Wynn, Sedgeford Hall Gardens, King's Lynn.*

— Apple trees were covered with blossoms, but Caterpillars destroyed the prospects of a bounteous crop. Pear trees had not much blossom, owing to excessive wet. Early Strawberries were almost a failure, but later varieties are very good, especially Waterloo and Givon's Late Prolific. Cherry trees trained against walls are badly infested with black fly. Potatos generally are looking well and promising a bountiful crop of tubers. Owing to the heavy rains Peas have grown quite out of their normal character, and the pods are a long time in filling, owing to an absence of sunshine. *J. W. Bradbrook, Ketteringham Park Gardens, Wymondham.*

SUFFOLK.—The season has been very unfavourable for fruit of all kinds, owing to the unpropitious weather in April, May, and June. During July the weather has improved, and we still hope to have a good crop of large fruits. All kinds of fruit trees around this district showed an abundance of bloom, and with one or two exceptions the fruit set well, the exceptions being a few Pear trees, principally of the variety Duchess d'Angouleme that were in full bloom on April 27, when we registered 6° of frost. Strawberries promised well in the early stages of fruiting, but although an average crop has been procured, the quality has been very poor. All other small fruits, such as Currants, Raspberries and Gooseberries, have been abundant, and the market growers have complained of the very low prices. The soil in this district varies from a heavy to a light loam on a gravelly subsoil. In these gardens we have rather a light soil lying on a bed of sand and gravel. *Thos. Simpson, Henham Gardens, Wangford.*

(To be continued.)

THE ALPINE GARDEN.

PHYTEUMA CHARMELII

THIS is a very suitable plant for the Alpine garden. It grows about 12 inches in height and produces a number of violet-blue flowers. The foliage is linear-lanceolate in shape and of a dark green colour. It is quite hardy, and, unlike other varieties, it is easy of culture. When planted in ordinary sandy soil in a position that is exposed to sunshine, it needs nothing further than an occasional watering to ensure success. *W. G., Somerset.*

SEDUM ACRE.

ONE is frequently asked to name a plant that will grow and thrive upon the driest bank, amid stones, or in places where only a limited quantity of soil exists, and I know of no dwarf plant better suited than the common Stone-crop. Those persons who have seen the plant in flower in the neighbourhood of Michelham Downs, where it carpets the soil by the acre, will know somewhat of its value even as a flowering plant. In that district, hillock and mound and dale are often clothed with Sedum acre, and the mass of greenish-golden blossoms which it produces in its flowering season is most beautiful. Recently I saw it growing upon the almost perpendicular railway banks between St. Mary Cray and Swanley Junction on a very sandy or stony soil. A good plan of planting Sedum acre on steep and sun-scorched banks is to gently rub a few tufts of the plant through a sieve of not larger than a half-inch mesh, mixing the particles with soil and then sow the mixture on the bank. The best time for sowing these tiny pieces of the plant is during the autumn season.

CONVOLVULUS CNEORUM AND VERONICA HULKEANA.

CONVOLVULUS Cneorum is a native of southern Europe, whence it was introduced into this country in 1640, so that it has long been known in our gardens. Unfortunately it is not a truly hardy plant, and in cold localities, and during exceptionally severe winters in warmer spots, is often killed. It is a charming, flowering shrub, and blooms with such freedom as to entitle it

of excessive moisture during the cold weather. In the mild climate of the south-western counties, however, the winter rains do not harm them. The species is easily increased by cuttings, which make roots freely in sand under a bell-glass. The plants grow rapidly, the specimen illustrated at fig. 42, now over 3 feet in height, with a spread of 5 feet, having been planted as a rooted cutting only four years ago. The photograph was taken at the end of May, when the

a native of New Zealand, and was first known in England in 1865. The plant, part of which is here shown, is an exceptionally large one, being nearly 6 feet in height and 8 feet across. When in full bloom, at the end of May, it presents one of the most charming sights possible, the countless, branching flower-sprays, standing out from the wall and slightly drooping, forming a cloud of soft lavender colour from the ground level to the topmost shoot. Many of these flower-sprays are 2 feet in length. Everyone who sees this *Veronica* in flower is delighted with it, and certainly when at its best it is the glory of the garden. It is seen to the greatest advantage when trained to a wall, as, if left to itself, it forms a loose-growing bush. The species is supposed by some to be very tender, but this is not so, as it has remained unharmed when other shrubby species have been seriously damaged by frost. The species has, however, the unfortunate habit of dying off suddenly without any apparent reason. Small plants die in this manner as well as large ones, but the loss of a fine specimen is a deplorable loss to a garden. Possessors of large examples are naturally on the look-out for signs of failing vigour, but when such appear, the fate of the plant is sealed. The death of the plant is, by some, attributed to the strain of flower and seed-bearing, but even small plants with not a dozen flower-sprays sometimes die. It is, however, well to take every precaution to prevent the plants being weakened, and it is wise to cut the flower-sprays as soon as they have reached perfection. This has been done for several years with the specimen under notice, and this season over 500 bloom-panicles were cut on May 25, and the plant is at present in robust health. Cuttings, a few inches in length, taken off with a heel during the late summer and early autumn, strike readily. *S. W. Fitzherbert, South Devon.*



FIG. 42.—TENDER FLOWERS IN A DEVONSHIRE GARDEN: *CONVOLVULUS CNEORUM* BELOW, AND *VERONICA HULKEANA* ABOVE.

to a place in every rock garden in the warmer localities. It also does well against a south wall, especially if this be the wall of a hot-house, which will give out a certain amount of heat during the winter months, as this will tend to prevent its injury even in comparatively cold climates. Its narrow, silvery leaves, $2\frac{1}{2}$ inches in length and $\frac{1}{4}$ inch in breadth, are clothed with silky hairs, and this renders the plants impatient

plant was in full flower, but it blooms more or less through the whole year, a few blossoms being now expanded (July 20), and it also, generally, has blooms again in autumn. The flowers are pure white, flushed with pink on the reverse, and are $1\frac{1}{2}$ inches across.

The other plant in the illustration is portion of a fine specimen of *Veronica Hulkeana*, by far the most beautiful of the shrubby species. It is

ORCHID NOTES AND GLEANINGS.

CORYANTHES SPECIOSA.

THIS singular species is flowering in the gardens of the Hon. N. Charles Rothschild, Ashton Wold, Oundle (gr. Mr. J. Wells). The large flower, whose singular formation to attract insects for the purpose of securing pollination was described and illustrated in the *Gardeners' Chronicle*, xxi. (1884), p. 482, xxiii. (1885), p. 144, and xxiv. (1885), p. 103, is yellowish with a slight rose shade and an orange tint inside the helmet. The membranous, wing-like sepals are thrown back, and the singular, fleshy labellum composed of a helmet-shaped hypochil, a neck-like mesochil, and the large "bucket" or epichil which catches the secretion which drips from the horns above. The whole flower is an interesting study.

Coryanthes, like *Stanhopeas*, should be grown in baskets, and suspended in an intermediate house. They require but little potting material around them, for in their native habitat they have no other material than the masses formed by their own roots.

CIRRHOPE TALUM MACULOSUM.

AN inflorescence of this pretty species, which is often known in gardens as *Bulbophyllum umbellatum*, is sent by Mr. Wilkinson, The Gardens, Cliffe Cottage, Rawdon, Leeds. The scape, which is 6 inches in height, bears a terminal head of nine flowers, each about $\frac{3}{4}$ inch across. The sepals and smaller petals are of a pale, greenish-yellow tint, evenly spotted with purple, and the column-foot and delicately-poised labellum are white, densely spotted with bright purple. The short-winged column has a horn on each side of the anther-case. The species is a native of Nepal and the lower Himalayas, and it is an easy plant to grow in the intermediate house.

BULBOPHYLLUM SANDERIANUM.

THIS singular species, which is sometimes imported with *Cattleya labiata*, is also sent by Mr.

Wilkinson. The inflorescence is 15 inches in length, furnished with bracts to the number of about 40, the lower ones not producing flowers, and the upper bracts producing them in succession, so that only three or four are perfect at one time. The flowers are about $\frac{1}{2}$ inch in length, the sepals green, spotted and striped with purple, the small petals whitish, and the labellum, which is $\frac{1}{2}$ inch in length, is purple, feather-like, and easily moved by the air, or by changing the position of the flowers.

COLONIAL NOTES.

ECONOMIC PLANTS IN THE BRITISH COLONIES.

REPORTS on economic or industrial cultures in the various Colonies continue to reach us. As the Agricultural Department of each Colony becomes more efficient, its value to planters and others is more generally acknowledged and it is utilised as a means of promoting the cultivation and extension of economic plants and a knowledge of their uses and developments throughout the world. From a batch of these official publications before us, we select a few for special notice as indicative of their general character and of the value of their contents. It will be seen that they represent a wide geographical range.

From South Africa comes *The Agricultural Journal of the Cape of Good Hope*, the contents of which are as varied as they could possibly be. It includes a note on the possibility of the cultivation of the fibre-nettle, Ramie, on a commercial basis in South Africa, and the continuation of a very elaborate "Treatise on Citrus Culture from Seed to Fruit," besides other articles on plant diseases, and one on the "Wool Trade of the Cape." To show what liberal means are adopted for the dissemination of this journal, it may be stated that on the first page the following announcement is printed: "Published monthly in English and Dutch by the Department of Agriculture, and distributed gratis to bonâ fide farmers in the Cape Colony on application through the Resident Magistrate of the district." From New South Wales and Queensland comes the *Agricultural Gazette* and the *Agricultural Journal* respectively. The former opens with a continued article by Mr. P. H. Maiden on "Some Practical Notes on Forestry suitable for New South Wales," illustrated by photographs of trees of *Ginkgo biloba*, *Torreya nucifera*, *Podocarpus elata*, and *Prumnopitys elegans*. Under the title of "One of the So-called Quinines of N. S. Wales," Mr. Maiden has another paper on a Euphorbiaceous tree of New South Wales and Queensland (*Petalostigma quadriloculare*), the bark of which has a powerfully-bitter taste, and was said, at one time, to possess similar properties to quinine. This question, however, seems to be set at rest adversely by a report of its investigation at the Imperial Institute, from which the following is a quotation: "The results of the investigation show that preparations of the bark do not exert any marked physiological action. In consequence, it does not appear that the bark can be utilised for any important medicinal purpose." Referring to this report, Mr. Maiden says that it confirms the investigation of Dr. Thomas Bancroft, of Brisbane, and shows that a once-reputed drug of New South Wales is now proved to be of no practical value. The *Queensland Agricultural Journal* shows an equally variable contents dealing with tropical industries, under which are included "The Cultivation of Rubber for Tropical Australia," "Ramie for Queensland," and "Pipe Tobacco in Australia." The first is a thorough consideration of the subject from its botanical, cultural, and commercial aspects. Besides these articles dealing with economic

plants, there are others on dairying, poultry, and kindred subjects.

As might be expected, the literature issued by the Imperial Department of Agriculture for the West Indies has a wide range of matter, including, as it does, reports of experiments in the numerous economic cultures carried out at the several botanical stations. The experiments with seedling and other Canes in the Leeward Islands are fully reported, and the value of these experiments and reports is confirmed by a note to the Commissioner of Agriculture by Dr. Francis Watts, C.M.G., who has charge of these experiments. He says: "The introduction of new varieties of Sugar Canes is a subject of great interest to the planters in the Leeward Islands, both in connection with the increase in the yield of Sugar, and, perhaps, even more especially in connection with the combating of pests and diseases." *The Agricultural News*—the fortnightly organ of the Imperial Department of Agriculture for the West Indies—maintains its reputation for variety and interest, and is an excellent medium for the diffusion of scientific and practical knowledge amongst planters and others interested in the welfare of our West Indian Colonies. The same may be said of the *Bulletin of the Department of Agriculture*, published at Kingston, Jamaica, and edited by Mr. W. Fawcett, F.L.S., &c., Director of Public Gardens and Plantations in that island. It is worth noting, again, that in the case of this publication, the price of which is threepence, that the following note appears on the cover: "A copy is supplied free to any resident in Jamaica who sends his name and address to the Director of Public Gardens and Plantations, Kingston."

NOTICES OF BOOKS.

FLOWERS OF THE FIELD.*

WHEN a book, though excellent in its day, becomes more or less obsolete through the advance of knowledge, we welcome a new edition which retains all the old familiar features, but is accurately corrected in every point wherever necessary, so that the reader will not be misled. Such has been the case with the now valuable edition of the Rev. C. A. Johns' *Flowers of the Field*. It has been revised by Professor G. S. Boulger, and published by the Society for the Promotion of Christian Knowledge. Messrs. Routledge have now issued an edition nearly similar to the original, retaining the erroneous and now misleading details in the introduction, such as underground stems described as roots, the embryo confounded with the plumule, certain fruits described as seeds, &c. Some of these Mr. Clarence Elliott has repeated in the new glossary which is added. He has also written *celeratus* for *sceleratus*, correctly given in the Rev. Johns' text. He also omits all accents, instead of improving the text by adding others where omitted. Beginners are much perplexed as to how to pronounce Latin names, as *Clemâtis*, which is often wrongly pronounced *Clemâtis*.

Mr. Elliott says in his preface: "To have made a thoroughly scientific book of it was deemed inadvisable;" but it is most desirable for a book of botany to be strictly accurate. To be accurate is to be scientific. The new feature in the book is the addition of 92 plates containing 268 coloured figures by Miss E. N. G. Watkins. These may attract the reader, but in some cases they are not so good as those in the original; such, e.g., as the Lesser Celandine, in which the peculiar roots are omitted. With regard to the figures in the text, these are all similar to those in the Rev. Johns' text, but they are not improved by being greatly reduced in size. With regard to the number of illustrations, in the large family Cruciferae, the

original work had 28 good-sized figures. This edition has 22 in the text, and one plate of 4, so there is no gain in this respect. The coloured figures are very small, and no botanical (structural) information is to be gained from their flowers, although they may help in the hasty determination of a species. We do not know why Mr. Elliott changes *Dentaria* into *Cardamine*; neither Bentham nor Hooker recognise it as belonging to the latter genus. As a rule, only a few alterations of no great moment are made in the text, some rarer species being omitted.

On p. 289, Mr. Elliott introduces the heading, "Sub-Class II. Glumaceæ" over "Juncaceæ—Rush Tribe," and subsequently heads every left-hand page "Glumaceæ," in which he includes eight "Tribes," not one of which belong to Glumaceæ at all! In the Rev. Johns' work the only two families, grasses and sedges, which the British Glumaceæ contain, are added in an appendix (rightly embodied in the text by Boulger). These are omitted by Mr. Elliott altogether.

Professor Boulger's volume is 6 $\frac{1}{2}$ inches by 5 inches in size, whereas Mr. Elliott's is a thick octavo.

Professor Boulger's edition is thoroughly up-to-date, the families being re-arranged in accordance with the best floras of the day, and not in the obsolete grouping adopted by the Rev. Johns, which is retained by Mr. Elliott.

Beginners want to learn and remember the usually accepted sequence of the families (not "Tribes," as the Rev. Johns calls them). If they begin to study wild flowers with Mr. Elliott's edition, they will have to unlearn much when they come to use Hooker's *Students' Flora*, or Bentham's *Handbook of the British Flora*. H.

THE BOOK OF NYMPHÆÆ.*

WE have in *Das Buch der Nymphaeaceen oder Seerosengewächse*, as its title runs in the German language, a work by F. Henkel, landscape gardener, Darmstadt (assisted by F. Rehnelt and L. Dittman), which is most opportune at the present time, when the culture of aquatics is rapidly extending. The author supplies an introductory chapter on the history of the genera, which are among the oldest plants on the earth, being coeval with the Saurians, whose remains are found in the chalk strata. In that age, which preceded the Ice Age, when Europe, so far as the 50th degree of northern latitude, was covered with sub-tropical forests, Nymphaeas with far larger blossoms than are now found in the tropics, grew in the waters among Palms, Camphor Laurels, and Cinnamon trees: and in appearance the plants differed but little from those of the present day. Among the ancient inhabitants of Europe the rootstock of *Nymphaea alba*, which is rich in tannin, was employed as a medicine; and in the remains of the pile dwellings in Switzerland traces of the plant have been discovered. The reader is given a list of books which treat of the subject, viz., Linnaeus, who wrote of four species in 1771; Curtis, in the *Botanical Magazine*, in 1801, in tab. 552, gives the first picture of a cultivated Nymphaea, *N. Capensis*; followed in the next year with the North American *Nuphar advena*; 1805, *Nymphaea odorata* and *N. thermalis*, and the following year *Nelumbium speciosum*. De Candolle's *Prodromus*, 1824, gave 24 species. With the introduction of the Victoria regia at the middle of last century, interest in aquatic plants, and, more especially tropical and hardy Nymphaeas, was awakened.

The favour with which the coloured hardy hybrids are now regarded began when the prices of the plants became moderate.

A short chapter is given concerning the botanical position of the Nymphaeas, which, according to Engler, consist of *Nelumboideæ*, *Cabomboideæ*, and *Nymphaeoidææ*. The characteristics of these three sub-genera are given briefly, and the following chapters are devoted

* *Flowers of the Field*. By the Rev. C. A. Johns. Edited by C. Elliott (8vo., pp. 316). G. Routledge & Sons, 1907.

* Published by Friedrich Henkel, Gartenarchitekt, Darmstadt, Neuviere. Price 10mk.

to the geographical distribution of the plants, properties, and uses of *Nelumbiums*. There is a good list of species, garden forms, and hybrids in alphabetical order, with statements as to origin, year of introduction, name of introducer or raiser, form of bloom and colour, size of the bloom in centimetres, and general remarks.

The observations in regard to cultivation are most useful, giving as they do the sorts of soil and kinds of manure to be used, depth of water, temperature of air and water, the rearing of plants from seed and from rhizomes, and of cultivation in the open air. The discovery of the *Victoria regia* and its introduction have a chapter to themselves. The *Nymphæas* are treated similarly to the *Nelumbiums*, and owing to their being the more numerous group, they occupy a much larger portion of the book. In both, the text is furnished with illustrations of the leaves and blooms in outline, and reproductions of photographs of views taken of plants in glasshouses and out-of-doors.

A list of the hardy species of *Nymphæas* and hybrids is given in the same manner as is the case with *Nelumbiums*. The remarks on cultivation are very full and satisfactory. The illustrations number more than 100.

DIE MODERNE TEPPICHGARTNERIA (MODERN CARPET BEDDING).

THOSE of our readers conversant with the German language will find in this book, furnished with 172 plans of beds and parterres, a selection of new designs for planting, which differ in many particulars from those hitherto seen in gardens in this country or abroad. The work—the 7th edition—is an improvement and enlargement of the previous editions by the same author, and eminent specialists in this field have furnished many of the new designs given.

The work is by W. Hampel, and it is published by Paul Parey, Berlin, price 6s.

The Week's Work.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Manure water.—Many plants and shrubs just showing signs of flowering will benefit greatly if given several applications of manure water. The best time to afford manure water is when the soil is in a moderately moist condition. Take care that none of the liquid touches the foliage of the plants, and as soon after as the soil is in a fit condition lightly hoe the surface. If the weather continues hot and dry, a mulching should be applied.

Summer bedding.—While the plants used for summer bedding are at their best condition, it will be wise to take notes of those that have succeeded best, and of those which have failed. These notes will be of service in formulating plans for next year's bedding. At the present time any suggested changes may be better considered than would be the case later in the year, and it also allows ample time for securing the necessary stock of plants. A start should now be made towards this end; the plants in the reserve garden may be depleted of as many cuttings as they will yield, but in the flower-garden proper cuttings should only be taken from those plants which have made a free growth. During the succeeding four or five weeks, cuttings of *Heliotrope*, *Alternanthera*, *Fuchsia*, etc., will root readily, if firmly inserted in suitable soil in cold pits that are shaded and kept closed. Providing that the weather is not excessively wet, cuttings of *Pelargoniums* will root better out of doors than under cover.

Violets.—All runners should be frequently removed from these plants in order that growth may be restricted to one crown. If red spider is present on the foliage, a few syringings with either weak manure water or an infusion of *Quassia* chips will act both as a remedy and as a preventive. The frequent use of the Dutch hoe about these plants is beneficial.

Preparations for planting.—Recently-layered *Carnations* and such other plants as seedling *Campanula pyramidalis*, *Anemones*, and *Ranun-*

culuses will, from time to time, need planting in their permanent beds. The ground for their reception should be early prepared, which is advisable for many reasons: it allows time for the soil to become aerated and mellowed, and many quickly-germinating weeds grow and can easily be destroyed before the plants are placed in the beds. Where the autumn sowing of annuals is practised, the ground for the reception of these seeds should be manured and dug as early as circumstances will permit.

Spartium junceum.—Always a free-flowering shrub, the Spanish Broom has this year made a more gorgeous display than I can remember. A packet of seeds sown just over seven years ago furnished a stock of plants which now, although growing in a light and rather poor soil, are over 10 feet in height and almost as much through. This species is especially valuable, as it continues to flower freely till after September, when showy flowering shrubs are scarce. Rabbits greedily eat the young shoots, therefore in places in which these animals abound, wire netting must be placed as a guard around the plants.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq., Norwood, Alloa, Clackmannanshire.

Cucumbers.—Plants in pits, and which have been fruiting for the last three months, should now be pruned hard back. At the same time, remove to a depth of 2 or 3 inches the old surface soil and replace this with a rich loam. Afterwards give a good soaking of warm water to the roots. The plants may then be expected to start into fresh growth, and furnish a plentiful supply of fruits in the autumn. Syringe the foliage freely to guard against attacks of red spider.

Orchard-house trees.—Apple and Pear trees in pots perfect their fruits much better when they are plunged out-of-doors at this season. They should be placed in a sunny position on a well-sheltered border facing south. Coal ashes form the best material for plunging them into. The fruits should be protected from birds by nets placed over the trees, and as soon as they commence to colour, a piece of soft twine should be tied to the stalk and affixed to the nearest branch for support. Give the trees an abundance of water at their roots, and as often as two or three times a day during very hot weather; an occasional application of liquid manure will also prove beneficial. Reduce the supply of water when the fruits commence to colour, and at that stage discontinue the applications of manure water. The trees planted in the orchard-house should be syringed daily, and be afforded plenty of moisture at their roots. Allow an abundance of ventilation both by day and by night. All trees in pots that are cleared of their fruits should be plunged out-of-doors to ripen and mature their shoots.

Melons.—As soon as the fruits begin to colour, the amount of water applied to the borders should be reduced, but not so as to cause the foliage to flag, for this will affect the flavour. If the borders have been mulched, the litter will greatly assist in retaining the moisture in the soil.

Successional plants that are intended to furnish Melons about the end of August or the beginning of September will now be freely setting their fruits. These plants must be carefully watered, and the bottom heat must not be allowed to decline, especially at night-time and after waterings. Keep the atmosphere of the house moist both by day and by night, and besides admitting fresh air throughout the day leave the top ventilators open a trifle at night-time. Secure the fruits to the trellis with soft twine, and stop the fruiting shoots at one leaf beyond the fruit, but allow a few of the growths at the top of the plant to remain entire, in order to encourage a free root action.

Tomatos.—Plants growing in pots or in borders should have an abundance of fresh air about them both day and night during hot weather. Afford the plants copious supplies of water at their roots and manure water twice a week. Apply a top-dressing of fresh loam and manure to all plants that seem to require feeding. Train the plants to a single stem, and remove all lateral growths as they appear. Pinch the main shoot as soon as it reaches the top of the trellis. Plants in 6-inch pots that are intended for

furnishing a supply of fruits in winter should now be potted into 9-inch pots. After re-potting, afford the roots water and place the plants in a cold pit or frame, where they will grow sturdily till placed in their winter quarters. Seeds of the variety *Winter Beauty* should be sown for a later batch of plants.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Chrysanthemums.—These plants have now filled their pots with roots, and will require much water, for at no time must they be allowed to suffer from dryness. Afford slight applications of stimulants, but do not over-feed the plants, or rank, soft growth will result. The necessary tying of the shoots, "taking" the buds of the more forward varieties, and the removal of side shoots must be performed. Superfluous shoots must be removed early, and not at the stage when their removal will cause a check to the plants. Guard against aphids by puffing powdered tobacco on the shoots, and be on the watch for mildew, which is easily combated at its first appearance.

Freesias.—If these plants are required for flowering at Christmas time, they should now be potted. Having shaken the old soil from the roots, grade the bulbs and place those of equal size together, for if they are potted indiscriminately in different sizes, the plants will be very irregular, and the smaller bulbs will probably not flower. As a rooting medium, use a compost consisting of loam and leaf-soil mixed with plenty of sand. If the soil is in a suitable condition, and neither too wet nor too dry, watering will not be necessary for some time. Place the pots in a frame, and either shade the glass or place some fine leaf-soil over the top of the pots to keep the soil moderately moist. Remove the leaf-soil directly it is seen that growth has started. When the shoots are growing freely, they should have full exposure to the sunshine and an abundance of fresh air till cooler weather arrives, when the shelves of a moderately airy greenhouse will be a suitable place for them. At no time is it advisable to force *Freesias* into growth. When growth develops gradually, the stems are stiff and wiry, and the blooms last for a much longer time, both in a cut state and on the plant.

Cleansing plant-houses.—At the present time, many frames and glasshouses are empty; it is therefore a convenient time for performing any necessary repairs, for cleansing the glass, and for lime-washing the walls, &c.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE Bart., Burford, Surrey.

Odontoglossums.—At the warmer end of the cool house such plants as *Odontoglossum grande*, *O. Schlieperianum*, *O. Insleayi*, and its variety splendens are now sending up new growths, and when roots are seen pushing through the compost, afford more water to the plants, but avoid saturation of the compost as the stout fleshy roots are liable to turn black from excessive moisture. Periodically examine the young growths, and see that no water lodges in them, as they decay sometimes from this cause. The rare *O. Williamsianum*, a supposed natural hybrid, is now in flower. This plant, when growing, requires the same treatment as that afforded *O. grande*, &c.

Miltonia vexillaria.—Plants of this species that flowered early in the season should now be re-potted, but previous to commencing the operation it will be advisable to ascertain that the growths are perfectly free from small yellow thrips. These insects are often found concealed low down in the axils of the leaves where it is difficult to eradicate them with either a brush or a sponge without causing injury to the tender foliage. The most effectual method of destroying them is to dip or wash the growths in either XL All insecticide, or Nicotine soap, at the strength of 2 ozs. of the insecticide to 1 gallon of warm water. After dipping the plants into the liquid, place the pots on their sides, so that the insecticide may drain from the base of the plant to the tips of the leaves instead of percolating about the roots. When they have drained sufficiently rinse the growths with tepid soft water, and carefully shade the plants from direct sunshine for a few days.

Repotting.—Any plants that need repotting should be turned out of their pots, have all the old compost removed and any dead roots severed. It is advisable to look very carefully around, and under the base of each plant for woodlice, as numbers of these pests are often found concealed among the short roots. Many Orchid growers use rather large pots or pans for accommodating this *Miltonia*, but after considerable experience I find it an advantage to use receptacles that are small. The pots should be half filled with small crocks for drainage material, and a suitable compost is either one of good fibrous peat, or polypodium fibre, to which is added an equal quantity of chopped sphagnum-moss. When repotting have the base of the plant a trifle above the rim of the pot, and carefully press the compost down amongst the roots in a moderately firm, compact manner. Place the plants in the intermediate house, and in a position as near to the roof glass as is convenient, for exposure to much light and air is necessary to their well doing. For a few weeks after repotting the plants afford water very sparingly, but when new roots have been freely formed the amount of water afforded may be gradually increased in quantity. Unhealthy plants should be repotted into the smallest pots that will accommodate them, and they will be greatly benefited if dense shade is afforded them until growth is again active.

***Miltonia* × *Blueana*.**—The distinct hybrid *M. × Blueana* and its several varieties are now at their fullest development of growth. Afford them plenty of water at their roots, and give them a position in the Cattleya or intermediate house where plenty of air and light but not direct sunshine can reach them.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to LORD CLINTON, BICTON, East Devon.

Apples of such varieties as Lord Suffield, Lord Grosvenor, Ecklinville Seedling, Duchess of Oldenburgh, and Keswick Codlin should be further thinned if necessary; the fruits so removed will be useful for tarts. American blight is making its appearance on some of the trees. This pest must be killed by methylated spirit or paraffin emulsion, applied by means of a brush, which should be worked well into the crevices of the bark during the operation. Fruits required for exhibition purposes must be encouraged to develop, and nourishment should be applied to the roots from now onwards, except in the case of any tree not carrying an average crop. As the smaller fruits, such as Strawberries, Currants, &c., become scarce, early-ripening varieties of Apples will be valuable.

Peach and Nectarine Trees have grown freely during the past few weeks and their shoots will require further tying. See that the fruits are not shaded by the foliage, for those that lack colour are usually deficient in flavour. Keep the rooting medium in a moistened condition now that the fruits are swelling, and afford manure to any trees that are considered to be in need of it. As soon as the early ripening varieties are harvested of their fruits remove any superfluous shoots, for this will assist in the proper ripening of the remaining current season's shoots, which will be the fruiting ones of next year. If a judicious disbudding of the young shoots was practised in the spring, very little pruning will now be required.

Late Strawberries.—Givon's Prolific is an excellent late fruiting variety of Strawberry, and it should be included in all collections. The fruits are large, highly coloured, and of excellent flavour. Sever all runners on the perpetual fruiting varieties before placing the net over the beds. Considering the untoward season, the Strawberry crop has been a large one.

Currants.—Red, White and Black Currants have all been abundant this season, and the two types first named will hang on the bushes for some considerable time yet if the birds can be kept away. Black Currants will all have been gathered by this date in the warmer counties, and it is good practice to do what pruning or thinning is necessary to the bushes now instead of deferring it until the winter, for it will enable the young shoots from the base to form a stout growth, and to fruit better next year.

General remarks.—Weeds must be destroyed by a free use of the hoe; it is many years since weeds gave so much trouble in the garden. Wasps

are much in evidence in these gardens, but their nests are destroyed by pouring cyanide of potassium into their burrows. This can be done at any time during the day, but the cyanide is a very strong poison and the greatest of care is required in its use. It must be kept from the reach of children. Another plan of destroying wasps is to pour ordinary gas-tar into their holes after it is dark, and to cover the hole with a big sod of turf; this plan, however, entails more labour. Protect early dessert Apples such as Mr. Gladstone, Beauty of Bath, Irish Peach, and Lady Sudeley, by nets, or the birds will destroy many. It may also be necessary to protect the fruits of Jargonelle Pears against birds.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq., Cobham Park, Surrey.

Onions.—The present is the most suitable time in most localities for sowing that portion of the Onion crop which will stand through the winter, but in very warm districts the operation may be deferred for a week longer. No benefit is likely to result from getting the plants too forward, as the more developed the plants become before winter, the less likely will they be to pass safely through hard weather. Giant Rocca, White Italian, Record and A1 are all excellent varieties that can be well recommended for sowing in August. If the ground is at all dry, apply a good watering in the drills before sowing the seeds, and if a little shade can be afforded from sunshine, until germination takes place, so much the better.

Salads.—A further sowing of Onion seeds for raising small plants to be used in salads may be made, also a sowing of the Black-seeded Cos and All-the-Year-Round Cabbage Lettuces.

Cabbages.—No time should be lost before making the main sowing of Cabbage, and Red Cabbage if they have not been made. Continue to make further plantings of Coleworts from previous sowings, by filling up any vacant and odd places, as these vegetables are always very useful.

Tomatoes, which last year were so successful all over the country, are this season a very indifferent crop. It is therefore the more necessary to give the plants timely attention in the way of removing all side shoots as soon as they appear, and in tying and watering, thus assisting them to develop their fruits as much as possible during the next month.

Peas are this season succeeding remarkably well up to this date. The maincrop, and plants raised from late sowings are in most seasons unsatisfactory, as they suffer from drought and excessive sunshine at the time the pods should be filling, but this season late plants are making satisfactory growth and are flowering, setting, and swelling up well. The latest plants which we have just staked are very promising; the heavy night dews which are now prevalent are helping them more than the overhead sprayings which have to be resorted to in very hot weather.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

Park-fencing.—In the laying out of new parks and pleasure grounds, the provision and erection of boundary fences is not infrequently one of the most expensive matters to be considered. One of the most extravagant ways of enclosing such places is by a dwarf wall capped by an ornamental iron railing. This method of fencing does not appear to be so much in vogue now as it used to be, and should never be adopted unless under very exceptional circumstances, and in special positions. It often happens that those who are responsible for advising park authorities in such matters, favour the so-called unclimbable type of fence under the impression that this is the ideal kind for park purposes. These are usually from 6 feet 4 inches to 7 feet 6 inches high, and are composed of perpendicular iron bars with two or three horizontal bars to keep them in position, and they cost anything from 15s. to 30s. per yard run according to the size of iron and the work put into their construction. Those who have had any experience with such railings know what an extravagant form of fence this is, for it is neither ornamental nor is it unclimbable, and a much cheaper and cheaper form is quite as serviceable in keeping undesirable persons out of the grounds. For several years past we have not used iron fencing more than 4 feet 8 inches in height, and by the

judicious employment of barbed wire such a railing can be made quite as satisfactory as one 6 feet 4 inches high. It is found that the distance between the perpendicular bars is of more importance in keeping out trespassers than the height of the fence. If these bars are more than 5 inches from centre to centre small children are able by a little pressure to pass between ordinary $\frac{5}{8}$ -inch square or $\frac{3}{4}$ -inch round iron bars, and thus cause much injury to boundary shrubberies. Many large and important parks in this country have boundary fences composed of a wooden paling backed with plants of a strong-growing shrub, as a hedge. From the perishable nature of wood these require frequent repairs, and the expense involved in their maintenance becomes very high, so that, although the initial cost of an iron fence is great, in the long run the expense would probably be much less than the wooden one.

Minor fences.—Besides the boundaries a number of different places inside the parks require to be fenced off from the public—such as isolated shrubberies, slopes of banks, streams and ponds. In places of this description ordinary iron hurdles or dwarf hairpin fencing prove inexpensive and satisfactory. In the Glasgow parks a fence composed of wood and twisted wire about 3 feet to 4 feet high is used for these purposes, and, besides being cheap and easily fixed, its appearance is quite in keeping with the surroundings.

THE APIARY.

By CHLOEUS.

Marketing Honey.—Honey has too long been looked upon as a luxury of the privileged few, whereas it should be regarded as a necessary food in every household. To create a large demand for honey, and to cultivate the public taste for such an excellent food, should be the aim of the beekeeper. Many may ask how the apiarist can assist in either of these matters. He should place the honey on the market in a cleanly and attractive manner, and for this purpose he should use jars or tins, and the extracted honey should be strained so that no foreign matter may be found in it. The honey itself needs attention, and it should never be extracted from any but sealed combs, so that the aroma is retained and the presence of thin honey floating on the top avoided, for thin honey is little better than sweetened water. A beekeeper well known to the writer easily obtains from 9d. to 10d. per lb. for his produce, whilst his neighbours are glad of 4d. and 6d. for theirs, and at these low prices they have a difficulty in disposing of their honey. The causes are not far to seek. In the former case the honey can always be relied upon as being the best, the cleanest, and the most attractive on the market.

Low prices.—Many apiarists will now be harvesting honey and placing it on the market, which in consequence will be congested, and prices are certain to be low. Not only is British honey offered for sale, but it has to compete with a large quantity from foreign countries and the colonies. Very little of the imported honey, however, can compare with the home product. Most beekeepers in this country do not produce more than 300 to 400 lbs. in one season, and with a little trouble this may be disposed of to retail customers.

Grading Honey.—To many beekeepers "honey is honey" from whatever source. Those who meet with the best sales take care to keep their honey from distinct sources separate. To mix all the honey together regardless of the source from whence it was gathered is to lose the aroma and to seriously injure the quality. The section honey may be graded as first, second, and third, each grade commanding a separate price. The sections which are evenly filled and sealed only will be placed in the first grade. These, too, will travel best, and if any are to be sent away those filled out to the wood are the most suitable. The second quality should be good also, but they need not be so even nor so well sealed. The third division would be a little inferior in the same points, and those not fit to be included in this division should be returned to the hives or be put into the extractor.

Cleaning sections.—All sections must be well scraped to remove propolis and finger marks. This is tedious work, but clean sections make all the difference between selling for a bad and a good price.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, AUGUST 10—
Ann. meet. Roy. Botanic Soc., 1 p.m.

TUESDAY, AUGUST 13—Exmouth Fl. Sh. (2 days).

WEDNESDAY, AUGUST 14—
Taunton Deane Fl. Sh. (2 days).

SATURDAY, AUGUST 17—
Sheffield Fl. Sh.
German Gard. Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—62.2°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, August 7 (6 P.M.): Max. 68°; Min. 52°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, August 8 (10 A.M.): Bar. 30.6°. Temp., 65°; Weather—Overcast.

PROVINCES.—Wednesday, August 7 (6 P.M.): Max. 62°, Colchester; Min. 53°, North of Ireland.

Diversity in Foliage.

At the present season of the year when vegetation is most plentiful, and all the trees are in full leaf, the diversity of form to be seen in the leaves of plants can hardly escape the observation of anyone at all interested in nature.

In view of the identity of the principal vital function of leaves throughout the plant world, their numerous shapes are remarkable. Considered fundamentally, the leaf merely consists of a framework, designed to sustain and expose the vital cells containing chlorophyll to the action of light to the best advantage, and that function appears perfectly fulfilled by the simplest vegetable organisms consisting either of single cells or mere chains of cells, such as are to be seen in the Characeæ, the green, fibry growths which accumulate in stagnant water and which can hardly be termed foliage at all. The Lichens are a step higher, and in the lower realms of vegetative life are the Algæ inhabiting both salt and fresh water; the Marchantias, and so on, grading upwards to the Mosses and Ferns, and, through these, to the flowering plants, including all the diverse forms, from dwarf to giant, from the tiny Alpine plant to the great Sequoia. In the process of evolution, thousands of genera, many more thousands of species, and still more thousands of varieties have arisen, in every one of which are forms of leaves, of which no two are alike. Even among the myriad

leaves of a single tree, the Pines, perhaps, excepted, it would be difficult to find two leaves which appear exactly similar, even to the unaided vision. We can easily ascribe to evolution a difference in size, as we know that leaves subjected to shade and moist conditions respond to such by expansion, so as thereby to counterbalance the diffusion of light, while, on the contrary, foliage exposed to strong light and also to greater stress of wind is naturally dwarfed. This, however, does not account for their marvellous uniformity, grading from simple, undivided leaves to decomposite ones of infinitely fine cutting, or leaves of almost any imaginable outline, varied, moreover, by equally infinite variety of plan in the veins which form the supporting network of the cells.

Even when growing under apparently similar conditions, enormous differences in size are to be seen in leaves; thus, the tiny-leaved Box and the large-leaved Sycamore, and the Willow or Poplar associated with the Horse Chestnut are familiar examples of contrasting foliage growing side by side.

This variability, however, is mainly confined to one of the two great divisions of foliage-bearing plants, namely, the dicotyledons, or those which start life from the seed with two primary leaves and subsequently build up their stems by outside additions, forming in shrubs and trees the so-called annular rings with which we are familiar. In the other division, that of monocotyledons, the members of which start with a single primary leaf and to which the great family of Grasses belongs; also the Palms, Aloes, Yuccas, Lilies, and other bulbous plants, there is a general similarity of type in the shape of long, undivided leaves. If these are examined it will be found that a general characteristic is the system of parallel veins running from end to end, so that, while the leaves may be easily split longitudinally, it is a difficult matter to break them across. This system of venation does not lend itself to the formation of irregularly-shaped or divided foliage, nor to any marked variation of type, such as is common in dicotyledons. It is easy to see, for instance, that a leaf with a midrib from which springs a series of veins running to the margin, hering-bone fashion, may by simple extension of such veins become saw-toothed, deeply cut or even divided into secondary divisions, which appear impossible where all the veins run straight to the tip. The dicotyledons, having their veins arranged in an infinite variety of plans, have been able to respond to the influences of environment to a far greater degree. Cold and exposure, or great heat accompanied by drought, would naturally check the extension of the veins, and thus simplify the form of leaf, while conditions of an opposite character, as warmth, humidity, and shelter would stimulate the extension of the veins and, therefore, tend to bring about diversity of foliage.

Nature has endowed leaves with a capacity for serving other purposes than mere exposure of chlorophyll to light, an instance of which may be seen in the wonderful adaptation of the Droseras and Dionæas, and other genera, whose province it has become to obtain other food than that contained in the carbonic acid in the air, and whose leaves have been modified to serve this function.

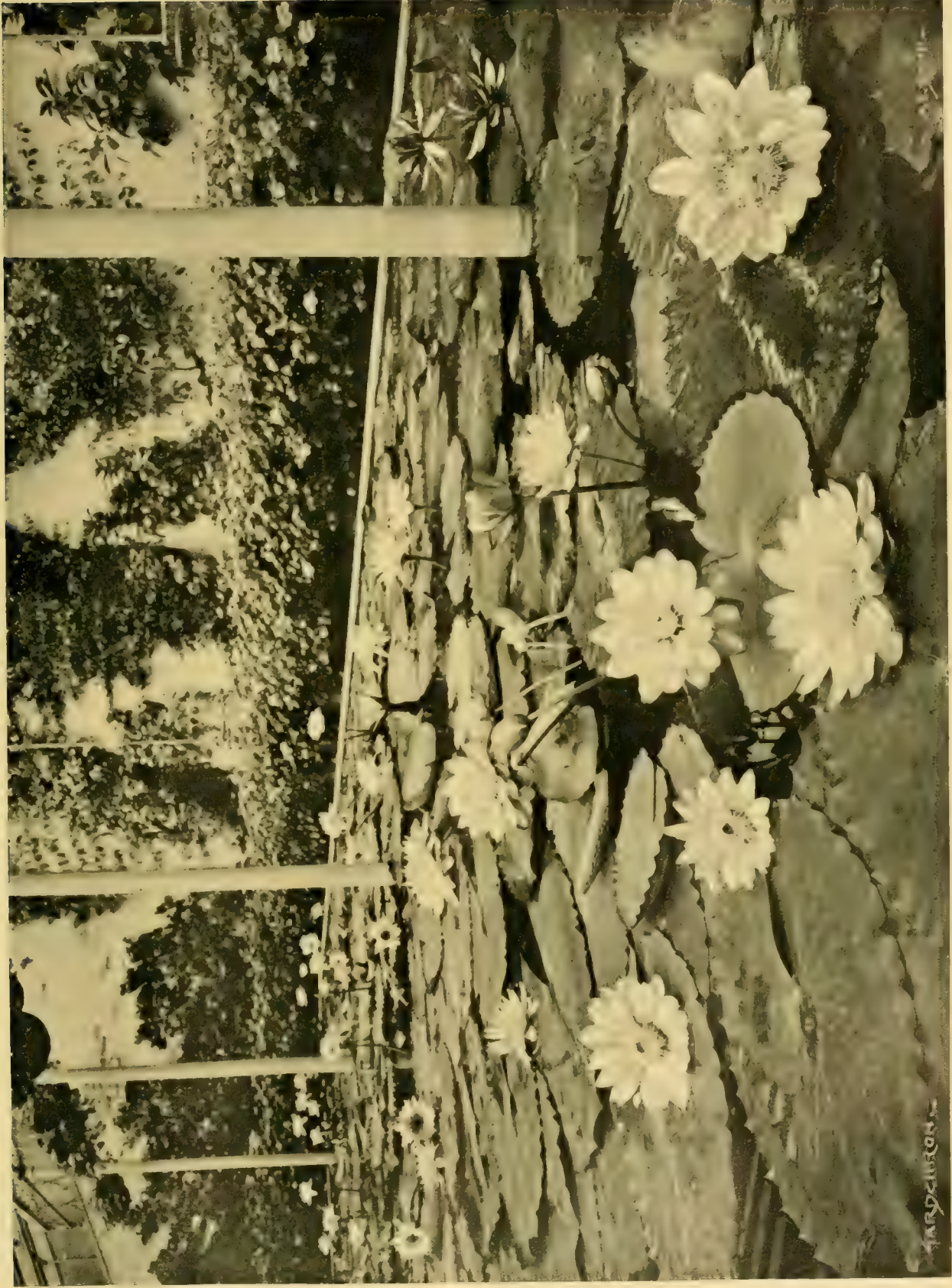
OUR SUPPLEMENTARY ILLUSTRATION.—The four new varieties of Sweet Peas which form the subject of our Supplementary Illustration represent the latest additions to this popular flower. These, with three other varieties, were selected for awards at the annual show on July 16 last of the National Sweet Pea Society. All the flowers depicted in the illustration possess an undulate standard, though in the case of the variety St. George this is seen in a slight degree only, and it is the colour rather than the form of this flower which is its chief attraction. The colour is described by our artist as translucent scarlet, with wings shaded a crimson scarlet, and the keel of pale rose; the type of flower is known as orange, and it is certainly the best of this shade. All the remaining varieties shown have the waved standard and spreading wings of the Countess Spencer type, a bowl of which variety, with decorated grasses, is illustrated at fig. 43. The variety Evelyn Hemus is one of the best of the bicolor flowers. It has a cream-coloured ground, with a suffusion of rose which deepens at the margins into a distinct edge of this colour. Silas Cole is a very large flower with a broad, waved standard that is a deep reddish maroon shade. The wings are purple and of a somewhat deep tint, the keel is mauve with a white base. It will form a suitable companion to the well-known Black Knight. The variety Rosie Adams is a flower of large size and with a peculiar colouring, the central parts are violet or mauve, and this merges in the standard into a shade of rose. The names of the raisers were given in our issue for July 20, page 56.

THE BOTANICAL MAGAZINE.—The following plants are illustrated and described in the issue for August:—

ALOE NITENS, tab. 8147. This species was sent to Kew in 1877 by Sir HENRY BARKLY when Governor at the Cape. The specimen is cultivated in the Succulent House at Kew; it is 12 feet high and flowers in mid-winter. The species has green leaves crowded into an apical crown. The panicle bears about seven spikes, and the densely flowered spikes are described by Mr. C. H. WRIGHT as resembling those of Kniphofia aloides. The showy character of the flowers is due to the orange-and-red coloured stamens and anthers. In a brief note on the cultivation of Aloes, Mr. W. WATSON describes this species as one needing less heat than most others, and suggests that it would probably be an ideal plant for the gardens of the Riviera.

BRUCKENTHALIA SPICULIFOLIA, tab. 8148. This Ericaceous plant was discovered by SIBTHORP in Asia Minor more than a century ago. It was described as *E. spiculifolia* by SALISBURY in 1802, and as *Menziesia Bruckenthalii* by BAUMGARTEN in 1816. Dr. OTTO STAFF now describes the plant as having quite the appearance of a small Erica, but as differing from that genus in the campanulate calyx and the almost complete absence of a disc. It is pretty well-known as a cultivated plant in this country, growing about 6 inches high and having rosy-lilac coloured flowers. Mr. W. J. BEAN states that the species thrives well in the open air at Kew, planted in a light, peaty soil, where it forms close tufts about 6 inches high and a foot or more across. It commences to flower about mid-June, and remains in flower for about one month. Although quite hardy, the plant is too small to stand rough shrubby treatment. The best place for it is, perhaps, a shelf or miniature plateau on the rockery.

CALATHEA ANGUSTIFOLIA, tab. 8149. Mr. C. H. WRIGHT describes this species, which has been cultivated for many years, owing to its attractive foliage. Earlier names for the same plant are *Maranta discolor* and *Heliconia discolor*. It has narrowly, oblong acuminate leaves, 2 feet long and nearly 5 inches wide, pilose on both surfaces,

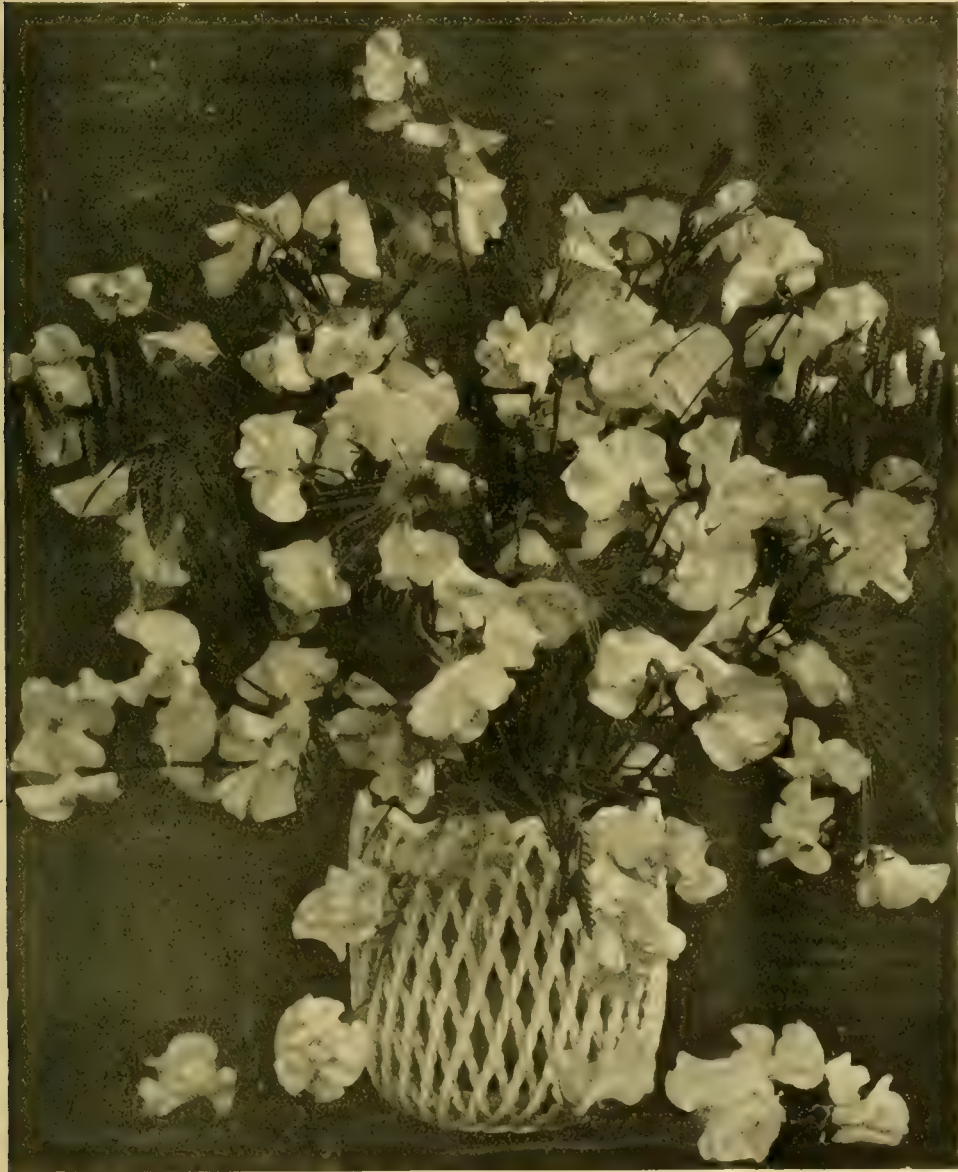


THE NYMPHAEA HOUSE AT SHIPLEY HALL, DERBY, WITH *N. STELLATA*
AND OTHER SPECIES IN FLOWER.

green above and purple beneath; the petiole is about 2 feet long, green, spotted with red, densely clothed with patent hairs, except for about an inch below the blade, where it is glabrous and swollen. The flower scape is 6-10 inches high, yellowish, spotted with red. The flowers are showy by reason of the pale yellow corollas. Mr. W. WATSON recommends the planting out of Calathea and Marantas rather than their cultivation in pots, and a selection of the two genera planted out in the Nepenthes House at Kew affords an instance of the success which attends such treatment. All the species enjoy a light, rich soil, plenty of moisture, shade, and a tropical temperature

is so decorative as the stemless species, and so far all attempts to cross them with plants of the latter type have proved unsuccessful.

DELPHINIUM MACROCENTRON, tab. 8151. Mr. W. BOTTING HEMSLEY describes this species, and the figure was prepared from a plant grown in the gardens of Mr. JAMES O'BRIEN at Harrow-on-the-Hill, Miss O'BRIEN having contributed a drawing illustrating the habit of the plant. The species was first discovered in Lykipia in the Masai country in 1884. The Hon. WALTER ROTHSCHILD imported seeds from Mount Elgon. The plant is a perennial herb, hairy in all its parts, and the stems, as grown in a pot, are about 5 feet high, slightly branched, having palmately divided leaves.



[Photograph by J. Gregory.]

FIG. 43.—SWEET PEA COUNTESS SPENCER ARRANGED IN A VASE WITH ORNAMENTAL GRASSES.
(For text see page 110.)

STREPTOCARPUS HOLSTII, tab. 8150. This is a caulescent species, raised at Kew from seed received from the Berlin Botanic Gardens in 1905. Two other caulescent species have been already figured in the *Botanical Magazine*, namely *S. Kirkii* (tab. 6782) and *S. caulescens* (tab. 6814). Mr. W. BOTTING HEMSLEY, who describes the present species, states that it is a much more ornamental plant than either of those named. It grows about 18 inches high, has fleshy, long-stalked, ovate, slightly hairy leaves. The cymes are produced in the axils of the upper leaves, and the flowers are of mauve-purple, with a white throat. Mr. W. WATSON states that none of these caulescent species

The flowers are hairy, blue and green or yellow, and green in some of the wild specimens, with a whitish apex, about 2 inches long. Mr. O'BRIEN is of the opinion that the species may prove to be hardy.

THE JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY.—The thirty-second volume just issued contains a great amount of interesting matter. Exclusive of the *Proceedings*, which fill 240 pages, there are 350 pages of text. The more important "papers" and original contributions are as follow:—"A Japanese Garden in England," by Mr. JAMES HUDSON; "The

Formation and Care of Grass Lawns," by Mr. MARTIN H. F. SUTTON; "Garden Nomenclature," by Mr. G. W. BULMAN, M.A., B.Sc.; "Parasitic and Saprophytic Plants," also "Some Remarkable Adaptations of Plants to Insects," and "The Origin and Peculiarities of Climbing Plants," all by the Rev. Prof. GEO. HENSLAW, M.A.; "Animated Photographs of Plants," by Mrs. DUKINFELD H. SCOTT, F.L.S. (see *Gardeners' Chronicle*, April 28, 1906, fig. 110); "Phenology as an Aid to Horticulture," by Mr. EDWARD MAWLEY; "Some Phases of Twentieth-Century Horticulture in the United States," by Prof. CORBETT, of Washington; "Tea and the Tea Plant," by Sir GEORGE WATT; "Meteorology in its Relation to Horticulture," by Mr. R. H. CURTIS; "Researches at Wisley," by Mr. GEO. MASSEE; "Notes on Some Cornish Gardens and on Some Wild Plants Growing about Land's End," by Mr. A. WORSLEY; "An Annotated List of the Species of Campanula," by Colonel R. H. BEDDOME; "Horticultural Education," by Mr. F. J. BAKER; "The Education of the Cottage and Market-Gardener," by Mr. T. S. DYMOND; "The West Indian Lime," by ARCHIBALD J. BROOKS; "Mendel's Law of Heredity," by Mr. C. C. HURST; "A Criticism of the Exhibition of South African Fruit Exhibition," by the Rev. W. WILKS; "Perfumes: Their Source and Extraction," by Mr. JNO. C. UMNEY; and "The Value of Fruit as Food," by Dr. JOSIAH OLDFIELD. Some of the papers, Mr. HUDSON's, for instance, were delivered more than two years ago, and the volume does not include any paper which has been read at meetings held during the present year. There are many useful reviews of new books, and the "Commonplace Notes" are interesting, as usual. The "Notes and Abstracts" occupy about 30 pages, but they have been obtained from fewer periodicals than usual. In addition to the subjects already mentioned, there are reports of the trials at Wisley and much further information of a miscellaneous character. The work of editing such a voluminous publication must entail a great amount of work, and Mr. SAUNDERS is entitled to congratulation for the excellent manner with which it is discharged.

THE COURSE OF FLOWERING IN ACER PLATANOIDES.—Some remarks are published in the *Botanischer Centralblatt*, No. 27, 1907, concerning observations made on the flowering of *Acer platanoides* in the town park at St. Gall (660 metres above sea level), by the Hon. P. VOGLER. It is there stated that every tree of this species had at first a 10 to 20 days' period when male blooms only were developed, followed at an interval ranging from one to five days by a development of female flowers, so that, as a rule, wholesale pollination appeared to be excluded. A second crop of male blooms appear in most instances.

FIBRE FROM PINEAPPLE LEAVES.—*The Florists' Exchange* contains a note by Vice-Consul J. K. FOSTER, on experiments recently made in Queensland to obtain useful fibre from the leaves of the Pineapple plant. This fibre is situated in the jelly-like tissue beneath the tough epidermis. The latter becomes removable by maceration in water. Hitherto the leaves have been thrown away, but should the fibre prove useful, and the process of extraction not too costly, the Pineapple cultivator will secure a valuable by-product.

A CHEAP BOOK ON THE CULTIVATION OF BULBS.—A handbook on the culture of the commoner bulbs has been published by the AGRICULTURAL AND HORTICULTURAL ASSOCIATION at the price of one penny. When we say that the author is Mr. S. ARNOTT, who frequently contributes to our own columns, and that the handbook contains numerous illustrations, it will be at once evident that the purchaser will be sure to obtain good value for his penny.

LILIUM TESTACEUM AND L. CANDIDUM HYBRIDS.—The following notes on this subject are from Herr F. SCHENBEL, of Oberlahustein, Germany, and were kindly sent us by Mr. GUMBLETON:—"Of the seedlings raised from crosses made between these two species, seven have flowered and, of these, six have bloomed for the first time. They commenced to flower earlier in the season than either parent. The one which flowered for the second time was as vigorous as *L. testaceum*, and reached a height of 5 feet; it bore six flowers as large as those of *L. testaceum* and of like form, but of a coral-red shade of colour. Of the remaining six three were of the same height as the first had been last summer, or between 3 and 4 feet, and bore two or three flowers each. In the case of two of them the colour of the flower was like that of *L. chalcedonicum*, but in size the blooms were as large as those of *L. testaceum*. The third had a large orange-coloured flower. The three other seedlings were of more slender growth, bearing only one flower each. In the case of two of them the colour of the flower was a shade redder than that of *L. testaceum* at their opening, but their interiors turned darker and darker every day until they were mid-way in colour between *L. chalcedonicum* and *L. testaceum*; the backs of the petals remained light and contrasted well with the interiors. The last of the seven seedlings was the most slender of them all, with a small flower much lighter than the female parent. I think that these hybrids prove two things—first, that hybrids often revert to one of their grandparents, showing little more than a trace of their immediate parents; and, secondly, that *L. testaceum* is a hybrid probably between *L. chalcedonicum* and some other nearly allied species."

LILIUM TIGRINUM.—Kew received in January of this year, writes W. W. in the *Kew Bulletin*, some bulbs of a *Lilium* from Messrs. WATSON & SCULL, 90, Lower Thames Street, E.C., who stated that they had been sent by a nurseryman in Shanghai, with the information that they were of an unknown Lily from the interior of China, where they were cultivated for some medicinal property contained in the bulbs, and that they had stems 4 to 6 feet high, and flowers "white with a little yellow." The bulbs, on comparison with cultivated examples of species of *Lilium*, were most like those of *L. auratum*, and the description of the flowers also pointed to that species, which, however, is known only from Japan, although it has been suggested that it may be of Chinese origin. Bulbs of an "unknown Lily from China, with white and yellow flowers" were soon afterwards offered for sale by English and other dealers, and a dozen were purchased for Kew. Some of the plants, from both sources, are now in flower, and they prove to be nothing more than *L. tigrinum*, Ker-Gawl., one of the most widely-cultivated of Chinese *Liliums*, which was first introduced into England in 1804, where it is now in almost every garden, and is represented by several well-marked varieties, including one with double flowers. It has been collected wild in Pekin (DAVID); Hupeh; Ichang and Patung (HENRY); Szechuen; Tchen-keoutin (FARGES); Corea (PERRY); Chemulpo (CARLES); the Korean Archipelago (OLDHAM). It is also wild in Japan. Dr. HENRY states that in Ichang this species is cultivated and the bulbs eaten, and that dry Lily flowers are used by the Chinese for flavouring soups and as a remedy for pulmonary diseases (see also *Kew Bulletin*, 1889, p. 116). It is therefore not impossible that the particular form of *L. tigrinum* now in question, with bulbs unlike those of the forms usually known in gardens, may be one of those cultivated in China as a vegetable.

DAHLIAS.—The following remarks on Dahlias in England are taken from a paper by Mr. G. H. HOWARTH, which is printed in the *Dahlia News* (American) for July:—"Perhaps no one flower has so many varieties as the Dahlia—the Cactus for instance was first exhibited in England in 1880—just 27 years ago, and now there are thousands of good Cactus Dahlias, hundreds of which have received first-class certificates, awards of merit, &c., for in England the Dahlia is of no use commercially until it has been properly judged and stamped with the approval of competent judges, a truly commendable way of setting a value on new varieties. Many varieties which in England and Germany may be all that is claimed for them, are a great disappointment here under the most favourable conditions—taking for instance 'Winsome,' supposed to be an ideal white, perfect shape, &c., as far as this variety has been exhibited in this country, it is very ordinary indeed, as is also Lord Roberts and Keynes White. Strange as it may seem, England has not produced a pure white Dahlia, all her so-called whites being of a cream tint, while France has sent over even in 1900 a good white Decorative Dahlia which was classed as Cactus at that time, 'Mme. Armond Charet.' England, France and Germany vie with one another each year in producing new or improving on old varieties in the Cactus shape, as well as improving the formation of the flower, and it is to those countries we owe to some extent the interest which is kept up by their introduction. It is to be hoped in the coming years that America, instead of following, will be leading, and this result can only be obtained after weeding out the worthless kinds and growing only the best; encouraging the growth of 'seedlings' and having a competent committee of sufficient jurisdiction to judge their merits, and if found worthy, award them distinctions."

THE SEED CROPS IN FRANCE.—According to a report in the *Bulletin des Cultivateurs de Graines*, the trade in the last season was satisfactory, and the warehouses having been nearly cleared of old seeds, especially of Cabbage seed, higher prices are hoped for. A good harvest is anticipated, more especially in the south, where the climatical conditions have been favourable. In the north and central departments more rain fell than was good for seeds, but improvement followed at the end of the rainy period. The sowings for 1908 have, in general, been satisfactory, and the weather favourable to growth. The harvest for the present year, so far as an opinion may now be formed for the various crops, will be as follows. Seed of Mangold Wurzel will fetch medium prices. The crops in the neighbourhood of Paris are as yet in good condition. Beets in the central districts of France have developed vigorously; but in the south growth is slow and aphides have already made their appearance. Seeds of table Carrots and cattle-feeding Carrots should fetch good prices. With the exception of certain crops in Central France, where the rainfall worked mischief, the condition of the seed crops leaves nothing to be desired. Cabbages promise well. The crops of Hearting Cabbage seed in the vicinity of Paris and in Central France are somewhat deficient; but in the south, on the contrary, the harvest will be excellent. The crop of Brussels Sprouts is safe, and that of Cauliflower in Italy will be excellent. Kohlrabi is everywhere good. Cucumber and Gherkin seed came up badly in the north and centre owing to wet, cool weather at the period of seed-sowing. In the south the plants suffered much less. Beans germinated badly, and the quantity sown in the south was inconsiderable. Cabbage Lettuce and summer and winter Endive are expected to yield normal crops.

Onions promise a good crop, but the promise may be spoilt at the last moment. Of the chief variety, "Vertus," several cultures in Central France are diseased, whilst about Paris and in the south the condition of the plants is extraordinarily fine. Leeks are excellent, but land occupied by this crop is limited in extent; the demand will about be covered, and medium prices obtained. Parsley showed well for seed, and a good harvest is expected. Peas will be plentiful, and as the demand is constantly increasing, dealers are expecting to get good prices. The harvest commenced early in July. Salsafy and Scorzonera promise good crops in France and Holland, but the amount of land under these crops is not great.

THE ONION CROP IN EGYPT.—The fear that high prices would prevail this season has been justified. In consequence of the low temperature the quality of the bulbs is inferior; at the beginning of the Onion harvest but small quantities came to hand, and the harvest was believed to be an inconsiderable one. The American demand also had an effect on prices. At the beginning of the month of May there were heavy shipments to England, but owing to the large quantities brought to market, prices declined. In that month the price per sack of 50 kilog., free on board, at Alexandria, was 4s. instead of 2s. 4d. as in the previous year. Up to the end of April there were shipped 680,904, against 1,037,495 sacks in 1906, of which 32,371 went to Hamburg; to English ports, 500,484; to Trieste, 110,915; Rotterdam, 21,396; and Marseilles, 12,000 sacks.

TIMBER FOR CLOG SOLES.—In several parts of Shropshire, Hampshire, and throughout Wales, the northern counties in particular, the making of clog soles is an important and remunerative industry. The wood of Alder is preferred for this work, but Birch, Willow, and Sycamore are occasionally used, and in many woodlands of these districts traces of the clog-maker may be found in the heaps of chips or shavings which are cut off in forming the soles. It is interesting to watch the speed with which the sole for a clog is shaped out of the prepared block of wood, and with the most primitive and modest appliances—a roughly-formed stool, to which a portion of an old scythe blade hinged at one end, and with a wooden handle at the other, is attached. In the way of dexterous handicraft no more interesting sight can be afforded than to watch a skilful maker of clog soles. The ready certainty with which the woodman, when taking one of the prepared logs in hand, sees how it can best be treated, and the readiness with which the rude tools are made to bring about the desired result, are admirable, and a forcible example of skilled labour. Young and quickly-grown trees, with stems from 9 to 12 inches in diameter and as clean as possible, are most sought after, and the price varies with the locality from 8d. to 10d. per cubic foot. Generally permission is given for the work to be carried out in the woodland where the trees are felled, and the cost of haulage and carriage is thereby saved.

ROOT ACTION AND BACTERIA.—Mr. F. FLETCHER, writing from Poona in a recent issue of *Nature* in respect to a previous note by Mr. SPENCER PICKERING on "Root Action and Bacteria," states that experiments he has made at Poona both in the field and in water culture with a large number of varieties of plants do not lead directly to the conclusion that the proper functioning of roots depends on the presence of bacteria. Water cultures have been made on a fairly large scale, three harvests of 90 plants being taken in a large number of dishes, each containing two litres of water. After the third

harvest, the water was allowed to stand and evaporate to half its volume. On attempting to use this water for further water cultures, all the plants sown in it died within two days and some within half an hour, the time varying with the variety of plant that was transplanted into the water, and with the variety that had previously been grown in the water. Further, boiling this water, writes Mr. FLETCHER, neither increases nor diminishes its toxicity to plants. It is, moreover, immaterial whether the nutrient solution is such as to become acid or alkaline after use; neutralisation in either case does not make it possible to grow plants in it. His experiments lead to the conclusion that the roots of all the plants so far tried excrete a substance that is toxic to all plants (including that by which it is excreted), but in different degrees. Similarly, in the field *Sesamum indicum* will not grow (on stiff black soil) within 2 feet of *Sorghum vulgare*; all the plants tried to appear to decrease the yield of neighbouring plants of the same variety by about 50 per cent. The effect of the toxic substance both in the field and in water culture is completely neutralised by tannic and pyrogallic acids, carbon black, and other substances. It is, of course, possible that bacteria in the soil have a beneficial action by elaborating antitoxins similar to those mentioned. Mr. FLETCHER states that he has not yet been able to isolate the toxic substance contained in the polluted water of his cultures.

ARGEMONE GRANDIFLORA.

ACCORDING to Mr. Archer-Hind who thinks very highly of this plant, it was known to Dioscorides more than 1,800 years ago, and, in Nicholson's *Dictionary of Gardening*, its date of introduction into this country is given as 1827. Notwithstanding the many years that have elapsed since it was first brought into England, the species is not common in gardens, which is the more surprising when its beauty is considered. The flowers, which are 4 inches across, are of a satin-like texture; they are pure white, with a central bunch of yellow stamens. Except in size, they are very similar to the blossoms of *Romneya Coulteri*, but the latter are often 7 inches in diameter. A bush, such as that illustrated at fig. 44, 4 feet in height and as much through, is an exceedingly pretty sight when in full flower, as many as 40 expanded blossoms being sometimes carried simultaneously. The plants usually begin to flower at about the end of June, and remain in bloom for about four months. The individual blossoms last little longer than a day, but are produced in such profusion that their fading is unnoticed. The leaves are grey and very prickly, and are from 6 inches to 9 inches in length. Seeds are borne freely in pods liberally armed with prickles, and seedlings may, therefore, be easily raised. The species is generally considered to be an annual, but in certain cases the plants throw up again from the roots. The plant illustrated was put out four years ago, and every season has renewed itself by growths put forth from the base. This was also the case with an extremely fine specimen in Mr. Archer-Hind's garden a few years ago, which was 5 feet in height and 15 feet in circumference. On one day this plant bore 50 expanded blossoms. Where it is treated as an annual, it is best raised in heat at the beginning of March, and planted out, when large enough, in the month of May. It much resents transplantation, and great care should be taken in planting it out, since the least twist given to the seedling may prove fatal. The plants succeed best in light soil, and the species being a native of Mexico, it likes a warm position. Most probably the fact that the soil, in which the plant illustrated is growing, is very light and its position warm, has much to do with its proving perennial. *S. W. Fitzherbert, Devonshire.*

HEMSTED PARK, KENT.

HEMSTED Park, the seat of Earl Cranbrook, is situated in the parish of Benenden, some four miles from the ancient market town of Cranbrook, in the heart of the Weald of Kent. The present peer is the second holder of the title; the first, perhaps better known as Mr. Gathorne-Hardy, was one of the brilliant coterie of statesmen who formed a distinguishing feature of the mid-Victorian age. The estate is charmingly placed on high ground, and the natural conformation of its entire area, with a soil varying from peat to a stiff sandy loam, lends itself to every variety of gardening. Park and lake, woodland and pleasure gardens are features of great interest, yet the wild garden, dells and pools would appeal to many as possessing a greater charm and beauty than the gayer flower-gardens, borders and walks.

The park, which is some 300 acres in area, is entered through iron gates, which are flanked

Azaleas are a feature of the estate, the former especially, and the varieties embrace many of the best in cultivation.

In the wild garden, near the mansion, is the largest lake, and it would be difficult to imagine a more reposeful and pleasing prospect than this affords. On the perfect July afternoon that I saw it not a ripple moved the surface of the water, nor the slightest breeze stirred the leaves of the Weeping Willows, Poplars, Limes, Rhododendrons, and Alders that fringed the banks.

During nearly the whole year the ground is covered by breadths of floral subjects. Snowdrops and Crocuses in the early spring are quickly succeeded by Daffodils of many varieties, and Primroses (this part of Kent is famous for these flowers), Bluebells and Tulips later; while during the summer Foxgloves, *Lilium Martagon*, Honeysuckle, and many other flowers flourish luxuriantly: in marshy spots *Primula japonica* abounds.

In the rock garden hardy Ferns propagate freely, and plants are found in every crevice of



FIG. 44.—ARGEMONE GRANDIFLORA: FLOWERS WHITE, WITH YELLOW STAMENS.

on the left by a picturesque lodge. The greensward on either side of the carriage drive is broken by trees placed in some cases singly, at others in groups, in effective situations, thereby enhancing the natural attractiveness of the landscape.

To a lover of trees, Hemsted would afford endless delight. Most indigenous species flourish, and many of the individual Oak, Beech, Elm, and Ash trees may be regarded as specimens. There is a fine avenue of Limes, also one of old Elms. Owing, however, to the evil reputation the latter species has of dropping its limbs suddenly, the Elms are to be replaced by Yews. Conifers also do well in various situations. There is a specimen of the beautiful *Sciadopitys verticillata* which is 25 feet in height. At the time of my visit the *Liriodendron tulipifera* was in full flower, and the *Eucalyptus* exhaled its pungent fragrance in the summer air. Rhododendrons and hardy

brick or stone where a spore can obtain a lodgment. Among many others, I noticed *Scolopendrum vulgare*, *S. vulgare marginatum*, *S. cristatum*, *S. ramomarginatum*, *Asplenium filix-fœmina* (vars.), *A. lanceolatum*, *A. l. crispatum*, *Polystichum aculeatum*, *Lastræa cristata* and *L. aculeata*.

Before concluding a description of this part of the grounds attention must be drawn to the meres, in which the Water Lilies are grown, and it would be difficult to find any spot more pleasing both by its natural conformation and its charming environment. There are two ponds situated at different elevations, while in these choice *Nymphæas* of the *Marliacea* type and *Arum Lilies*, &c., were at the time of my visit flowering in perfection, while in the marshy ground breadths of Forget-me-Nots, *Primula japonica*, *Mimulus*, *Iris*, hardy species of *Cypripedium*, *Digitalis*, and other bog-loving subjects were flourishing. Clumps of *Bambusa* and *Gun-*

neras evidently find in this spot congenial conditions. Many of the common English Ferns are seen, and a lover of Mosses could quickly cull an interesting collection from this spot.

Cultivation under glass is carried on in thirteen houses, which are suitably contrived for the various purposes they are put to. Tomatos showed good culture, and were furnishing heavy crops of fruits. Cucumbers of the variety Telegraph also made a fine show. The principal varieties of Grapes grown are Lady Downe's Seedling, Muscat of Alexandria, Madresfield Court, and Black Hamburg. Of Melons, Hero of Lockinge was doing well, the fruits being of large size.

In the stove-house was seen a small collection of healthy-looking Orchids, principally Cypripediums, also Begonias, Eucharis, Pancratiums, Clerodendrons, Allamandas, Dracænas, Gloxinias, and many exotic subjects.

In the fruit and vegetable departments the crops were developing well. Currants, Gooseberries, and Raspberries were all fruiting freely. In this quarter of the garden hardy perennials are planted for furnishing flowers for decorative purposes; there are also splendid rows of Sweet Peas. I noticed a collection of the best varieties of Chrysanthemums which promised well for the autumn and winter. Apples and Pears are grown in bush, espalier and standard forms, but some of the trees are aged, and the gardener hopes to replant them in the near future with newer varieties. Fruit is grown under considerable difficulty at Hemsted. The grounds are a veritable sanctuary for birds of all kinds. The owner delights in bird-life, and the rarer species are encouraged. Many varieties are, however, very destructive to fruit in the various stages of its development; consequently, owing to the number of birds, a continual struggle is being waged, and every means—save that of destruction—has to be employed to save the fruit-crop from the ravages of the pets. In the wall-trees, Plums, Peaches, and Pears were producing fruit fairly abundantly.

The mansion is an imposing structure of red brick, with stone facings and embellishments, built some sixty years ago. It occupies high ground, and forms a prominent landmark. The style of architecture is generally what is known as Elizabethan, though there are modifications, and a magnificent tower rises from the centre. The natural slope on which the house stands is formed into terraces. Stone steps lead from the highest to the lowest of these. Pediments with statuary and vases are at either side of the commencement of each flight of steps, while a handsome balustrade separates the gardens from the park. Formal gardening (with but one exception) is now entirely discarded. On the walls of the mansion are Honeysuckle, Ivies, Magnolias, whilst at the base of the walls *Carpentaria californica*, *Choisya ternata*, and *Camellias* thrive without any protection.

An interesting feature are the trees planted at different periods by members of our own Royal House, also by foreign potentates, eminent churchmen and statesmen. I noticed, too, a pergola, clothed by a number of varieties of rambling Roses.

On either side of the highest terrace there is a slight declivity, at the bottom of which the surface of the ground is flat. These spaces were formerly utilised for carpet and other formal bedding. In the centre of this space to the right is a handsome vase containing suitable tall-flowering subjects, while around the vase was a good selection of Begonias. At some distance from this bed the lawn is uncovered, forming a band which, with graceful meanderings, completes a circle. Here are planted a great number of choice Roses grown in bush form, such as the varieties Madame Cochet, Frau Karl Druschki, Papa Gontier, Dean Hole, Marie van Houtte, The Bride, Caroline Testout, Duke of Edinburgh, Ulrich Brunner, and many others. The beauty of this spot is completed by a bed of *Kalmia latifolia*, and a group of trees embracing

Cedars, *Cryptomerias*, Acers, Sequoias, and Evergreen Oaks. On the opposite side of the terrace a space is laid out geometrically, the lines being indicated by Box. With a little adaptation this could be formed into an ideal old Dutch garden.

In the herbaceous border a good selection of Phloxes, Helianthus, Asters, Lupines, Galegas, Rudbeckias, Poppies, Spiræas, Hemerocallis, and Lilioms were flowering. I observed, too, some interesting shrubs, including Weigelas, Berberis, *Andromeda japonica*, *Styrax japonica*, &c.

The conservatory is a structure measuring 19 yards by 18 yards. At the time of my visit it was gay with Coleus, Fuschias, Pelargoniums, Heliotropes, Hydrangeas, Palms, Ferns, Carnations, Phormiums, Camellias, and Habrothamnus, while the roof was in part adorned with the magnificent climber *Bougainvillea glabra*.

As one steps from the greenhouse on to the terrace a magnificent prospect opens to the view. The sight wanders from the park to the highly cultivated countryside beyond—Hop gardens, Wheat fields and grassland. Comfortable farm-houses nestle in the sheltering hollows, while shaws may here be seen climbing halfway up the hills, then tracts of country covered by timber, the remains of the primæval forest that once possessed the whole of the Weald. Villages with battlemented church towers allure the eyes—a panorama of English comfort, English culture, English beauty. At length the objects become more and more indistinct, until the horizon is bounded by the far-away South Downs, through a gap of which, on favourable occasions, a glimpse may be obtained of the sparkling waters of the distant English Channel. The gardens are in the charge of Mr. Adams. He has been in the employment of Earl Cranbrook for a short period, but he must be congratulated upon what he has already achieved. *Richard T. Hesketh.*

FRUIT REGISTER.

SOME GOOD STRAWBERRIES IN 1907.

I HAVE recently been able to note the value of a few varieties of Strawberries. From the private gardener's point of view, mere size is not so important as good flavour. Several new varieties have been sent out this season, notably Laxton's Progress and Reliance. These I have not grown. "Cropper" is well named; I saw it bearing an enormous crop, and the fruits were excellent. The first of what I call the good Strawberries on my list is "Reward," which has done well for three seasons. The immediate parents of this excellent Strawberry were British Queen and Royal Sovereign, and this latter variety appears to have united a vigorous habit and good cropping qualities with the excellent flavour of British Queen, with the result that Reward will thrive in soil that is not at all favourable to the British Queen. I do not go so far as to say Reward is equal to British Queen, but it should prove as popular as the well-known Royal Sovereign on account of its robust growth, excellent flavour, and good cropping qualities. I should class it as a maincrop or mid-season fruit, and the variety has this peculiarity—it perfects a larger number of larger fruits at one time than most varieties do. It is seldom injured by spring frosts, which often cause injury to Royal Sovereign, owing to its early flowering.

Another very fine fruit that is well worth a trial is "The Bedford," a cross between the varieties Dr. Hogg and the older Sir Charles Napier, and, though it may not be considered equal by some growers to Reward, I place it in the front rank for its good cropping qualities, rich flavour, and colour. As a garden variety it is most valuable for its free growth in poor land.

My last variety is Givon's Late Prolific, and this is certainly one of our very best late Strawberries. I planted this variety largely for some

years, discarding others, and we never had cause to regret having done so, for it is far superior to others for late-cropping. This variety, if grown on a north border, continues the supply of Strawberries well into August, especially if young stock is grown yearly for that purpose, and, in addition to its lateness, it is of excellent quality and crops well. The variety has been for some years in cultivation, but even now it is not known as much as its merits deserve. There are other varieties worth mention, but my object is to name only the best after a thorough trial and those that succeed well with ordinary culture. At the same time, it is advisable to make the soil as good as possible by the addition of suitable material. *G. Wythes.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

PHOTINIA SERRULATA.—In the issue for March 30, Mr. W. A. Cook, writing from Leonardslee Gardens, Horsham, mentions a specimen of this *Photinia* 22 feet in height and 23 feet in diameter, which he states is supposed to be the finest in the country. In this he is mistaken, for in the *Gardeners' Chronicle* of March 17, 1906, p. 173, particulars were given of an example growing at Pengreep, Cornwall, which is 35 feet in height and as much through. At Enys, near Penryn, there is a splendid specimen 35 feet in height and 34 feet in diameter, so that Mr. Cook's tree is beaten by 12 feet by these two Cornish examples. These enormous plants are very ornamental in the early spring when bearing their large corymbs of pure white blossoms, with which the crimson tint of the young foliage makes a charming contrast. *S. W. Fitzherbert.*

CULINARY PEA LAXTONIAN.—This new variety yields pods containing seven to nine Peas, of a dark green colour, and the pods are long enough for staging at the best exhibitions. The plants grow from 1 to 1½ feet in height, and the crop is very quick in coming into use. From seeds sown on March 9 on a south border, the plants produced Peas ready for use on July 3. The variety Thos. Laxton (which is one of the quickest Peas to mature) was sown on February 27, and the crop was ready on July 1, which is 124 days, against 116 days for Laxtonian. In flavour Laxtonian appears to be best of all. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

PLAGIANTHUS LYALLII.—As doubt exists as to this plant being hardy in this country, it may be interesting to know that a specimen planted in the open gardens at Basing Park five years since, in well-prepared ground on heavy clay, has withstood the winters unprotected save the first one after it was planted. The plant was about 18 inches in height and was planted from a 7-inch pot. It is now a good shaped bush, measuring 10 feet in height, and 8 feet 6 inches through. The seasons in our district are cold and late, and the gardens are situated between 600 and 700 feet above the sea level. *T. Down, Basing Park Gardens, Alton.*

FLORA OF PALESTINE.—I cannot accept Sir W. T. Thiselton-Dyer's interpretation of the Hebrew word translated "Lign-Aloes" in Numbers 24, 6. The tree Lign-Aloes or Eagle-wood is the wood of *Aloexylon Agallochum* of Cochin China, which yields strong perfume, much prized by Orientals. Balaam is not likely to have known this plant, though several false kinds are spoken of by the ancients. But, in interpreting the Hebrew word, it is not a question altogether of "philological evidence." Besides the consonants being the same as those for "tents"—there being no vowel-points in the original texts—the LXX translated the sentence, "As Lign-Aloes which the Lord hath planted" (R.V.), by, "tents which the Lord has pitched," using the same Greek word as in verse 5. The LXX has *aloth* once, but omits all mention of aloes elsewhere. Moreover, the Greek word *aloe* was never used for "lign-aloe." Again, the writer of the Epistle to the Hebrews, seemingly referring to this passage, speaks of "the true tabernacle which the Lord pitched" (Hebrew 8, 2). Lastly, Coverdale has—"as ye tentes which the Lorde hath planted."

The true Aloe is associated with Myrrh, Cassia or Cinnamon, because it was used to "fix" the more delicate perfume, but has none of its own. The Aquilaria-wood was first called Xyl-aloe (or Lignum-Aloe, i.e. "Lign-Aloe"), by Aëtius, a physician of the fifth century; because the wood was bitter like the resin of Aloe. As the interpretation must solely rest on probabilities, they seem to be in favour of "tents" rather than "Lign-Aloe." *Your Reviewer.*

WOOD-WOOL FOR THE SUMMER MULCHING OF STRAWBERRY BEDS.—Owners of small gardens often have difficulty in getting suitable material for the mulching of Strawberry beds. In such cases I would recommend them to use some of the coarser types of wood-wool now in such general use for packing purposes. A stone of it will go a long way if carefully put under the flower trusses in good time, and will answer the purpose of keeping the fruit clean. Most seedsmen keep it in stock, and no doubt if the demand were to increase it would be met by the merchants having smaller lots put up in readiness for quick delivery. At present it is only obtainable in a compressed form in large bales. I have an idea that slugs do not like travelling over the surface of this material, but as my experience of its use is only recent, I do not like to say too much as to its general merits. *H. J. C., Ulleskelf, York.*

GENISTA MONOSPERMA.—A note on this plant appeared in the *Gardeners' Chronicle* about three years ago, the writer of which stated that it was not likely to survive out-of-doors anywhere in England, except, possibly, in the extreme south-west. He suggested that, although under the burning sun of Morocco, or Palestine, or Spain, it was very beautiful when in flower, there was little hope of its blooming, even if it remained alive, in this country. About three years ago I received a plant under the name of *Retama monosperma*. I am unable to find this generic name in any horticultural dictionary, but the plant appears identical with specimens of *Genista monosperma* that I have seen, so I conclude that my plant is this *Genista*. The specimen has grown well and is now over 5 feet in height. This spring the thin flexible branches became studded with buds, the first flowers on one spray opening in May last. The plant bore several hundred buds, and when these were fully open it was a pretty sight. I have met with it in a few gardens, but have never before seen it in flower. In its native country it is said to inhabit dry, hot regions, the conditions of which would certainly be very different to those common in south Devon. The unusual and lengthened drought of last summer may, however, have been the predisposing cause which induced flowering. *S. W. Fitzherbert, South Devon.* [The genus *Retama* is now sunk under *Genista*, see *Index Kewensis*.—Ed.]

A VETERAN GARDENER.—I shall be glad if you will add to your interesting paragraph about Mr. Anderson in the issue for August 3:—"That during the 44 years of service as head gardener at Sewerby House, he has won and preserved the thorough confidence and affectionate regard of two generations of employers." *Y. G. Lloyd-Greame.*

THE GARDENING CHARITIES.—You comment in your issue of the 3rd inst. on Mr. Crisp's public-spirited action in forwarding to various gardening charities the fees received for showing his beautiful gardens, and you invite other garden-owners to imitate his excellent example. Why won't they? Some years ago you were good enough to publish a letter in which I urged this very course, but nothing has come of it, and probably never will, unless somebody will take the lead. I think it is the managers of the particular charities who ought to bestir themselves and bring the matter to a practical issue by inviting owners of interesting gardens and houses to add their names to a list of owners willing to follow Mr. Crisp's example. This list should be published from time to time, and I feel convinced it would not only rapidly find adherents, but the holiday of many a lover of gardens and architecture would be enriched thereby, as well as the exchequer of the gardening charities. Many people shrink from taking the liberty of asking admission to private gardens, who would nevertheless gladly go if, by paying half-a-crown, they could put their visit on a business footing. *L. Messel, Nymans, Handcross, Sussex.*

GARDENING BY SCHOOL CHILDREN.—The prominence now being given to children's exhibits at flower shows throughout the country shows an awakening to the fact that if future generations are to make gardening either a means to a livelihood or a recreation, the work of preparing for such results should commence early in life. Very common at most rural or provincial flower shows have been baskets or bunches of wild flowers, and occasionally, although none too frequently, some charming combinations have been seen, the product of children's efforts. At the Cardiff show recently some 150 baskets, and an equal number of bunches, or nosegays of wild flowers were staged by school children, and they made a very attractive feature. But beyond showing taste or skill in arrangements—and such skill and taste is specially worthy of encouragement—there was nothing at all educational about the display, and probably hardly one competitor in 50 knew even the common or local names of the wild flowers they had so abundantly collected. Much greater value would attach to classes for small bunches of wild flowers set up in distinct species or varieties in small bottles or jars, each flower being, so far as possible, correctly named. The instruction of the children in correct naming should be the duty of the school teachers, but the collecting and setting up should be the work of the children. Two classes, one for 12 kinds and one for 24 kinds, might well be included. It should be clearly understood that unless these wild flower displays are made educational they serve no useful purpose. At Cardiff there was a class for collections of wild grasses, which it was required should be named. Out of the several exhibits only one collection was either properly arranged or named. Still, that one served to show children what was really required of them, as, apart from each bunch being fixed on to a card neatly and conspicuously, the popular name was attached to it. If in future years it be made an absolute condition that all collections of these grasses shall be similarly shown and named, and that all others not so staged and named shall be rejected, also that collections of wild flowers be shown in bunches and named, then really good educational work will be done. But this is not gardening after all, any more than is 'nature study, as taught in schools, although it is made wonderfully instrumental in instilling into the minds of children a love for vegetable life in its varied aspects, such as can hardly fail to show its good effects in mature years. Drawings of plants, leaves and flowers, the watching and testing the growth of seeds, the unfolding of flowers and instruction in the organs of plants must materially help children to become, if not gardeners, at least lovers of nature. The great aim of the nature study teacher, however, should be to check in the children destructive tendencies, whether of vegetable or of animal life, and to lead them to understand that, as they are themselves but parts of a great whole, so should they learn to respect and sustain every other part, so far as in them lies. When wholesale destruction of animal or bird life forms the dominating sport of rich people, children can hardly be expected to understand why they may not ruthlessly uproot a plant, destroy a flower, crush a worm, or rob a nest of its eggs. After all, the best real work of instructing children in the art of gardening is found in school gardens. It is interesting to note how widely the demand for these has become. No head teacher of a boys' school now regards his school work or curriculum complete if it does not comprise lessons on gardening, and these lessons are given in properly organised school gardens. So far these gardens generally have been limited to boys, although I have seen some pretty ones devoted exclusively to flowers and cultivated by girls. When these small gardens are controlled by a teacher who is, as so many are, good amateur gardeners, or by some local working gardener, the boys are taught to do on their plots just the work they would be required to perform in market, gentlemen's, or their parents' gardens. One great need, indeed, almost an imperative need, in relation to this school gardening is that, wherever there is such, there should also be established a group of larger plots, on which the lads could continue their work and instruction for two years, or

longer, after they have left school. Those may come in time. Some day, it is hoped, the Council of the Royal Horticultural Society will organise in London an exhibition of elementary school gardening. *A. Dean.*

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 6.—The usual fortnightly meeting of the committees was held on this date. The display of fruits and flowers was quite the smallest seen in the new hall, due, probably, to the date falling immediately after a Bank Holiday. Although few, the exhibits were of first-class quality, and especially meritorious was a display of about 100 varieties of Gooseberries staged by Messrs. Jas. Veitch & Sons, a group of *Nymphæas* from Gunnersbury House Gardens, and a collection of *Glaucolus* flowers from Messrs. Kelway & Son's collection.

Many novelties were presented to the FLORAL COMMITTEE for awards, and of these two received First-Class Certificates, and four Awards of Merit. The greatest novelty was the scarlet *Eucalyptus ficifolia*, quite the handsomest species of the genus and rarely seen in flower in this country.

The ORCHID COMMITTEE granted two First-Class Certificates and one Award of Merit.

At the meeting of Fellows, held at 3 p.m., 32 names were submitted and accepted for membership, and a Paper was afterwards read by Mr. Arthur Bedford, of Gunnersbury House Gardens, Acton, on "*Hardy Nymphæas*."

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. Chas. T. Druery, H. B. May, Geo. Nicholson, T. W. Turner, J. T. Bennett-Poe, Chas. E. Shea, Jas. Douglas, J. F. McLeod, W. T. Ware, John Jennings, W. Bain, Chas. Dixon, A. Turner, Wm. Cuthbertson, H. J. Cutbush, E. H. Jenkins, James Walker, and W. J. James.

A group of exceptional merit was composed of hardy *Nymphæas*, with a setting of tall members of other aquatic species. This was exhibited by LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr. Mr. James Hudson). In the centre of the group were blooms of the tall *N. gigantea* Hudsonii, with pale-blue, globular-shaped flowers, and *N. stellata*, also blue, with pointed segments and very erect peduncles. Another species of this type is *N. pulcherrima*; the blue of the petals is set off by a yellow colouring at the base. Among the darker-coloured flowers may be mentioned the variety William Falconer, with claret colouring, and *N. gloriosa*, a handsome flower of a shade of rose. *N. Marliacea chromatella* is pale yellow, and *N. collosa*, the largest of all exhibited, is flesh colour. Interspersed in the group were flowers and foliage of *Alisma plantago*, *Butomus umbellatus*, *Calamus acorus*, *Typha latifolia*, *Cyperus longifolius*, *Spiræas*, &c. (Silver Flora Medal.)

Mr. JAMES DOUGLAS, Edenside, Great Bookham, Surrey, showed a small but choice exhibit of Border Carnations. Quite the handsomest in the collection was the scarlet variety Robert Berkeley, with well-formed flower of large size, and rich colouring. "Charm" is a "Fancy" Carnation with rose makings on a white ground. Miss Willmott, Lara (flushed rose on a yellow or buff-coloured ground), Black Prince (deep purple), Victoria (cinnabar), Prof. Cooper (dull lavender), and Liberté are other good varieties. (Bronze Flora Medal.)

MESSRS. JAMES VEITCH & SONS, LTD., Chelsea, showed a semi-circular group of interesting plants, including *Romneya Coulteri*, *Astilbe grandis*, with erect plumes of small, white flowers, and sprays of *Clethra canescens*, with long racemes of white flowers.

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, showed an extensive collection of sprays of ornamental-leaved and showy-flowered trees and shrubs. The exhibit filled the whole of a long table that extended the entire length of the building. In it were varieties of *Populus*, *Rhus*, *Privets*, *Ericas*, *Ivies*, *Maples*, *Weigelas*, *Elders*, *Photinias*, *Cornus*, *Olearias*,

Spiræas, Eleagnus, Cotoneasters, Osmanthus ilicifolius latifolius albus, Fuchsias, Liriodendron, Jasminum Wallichianum, Loniceras, &c. (Silver Flora Medal.)

Messrs. KELWAY & SON, Langport, Somerset, made a fine display with flowers of their noted strain of Gladioli. The exhibit was replete with many beautiful varieties, but we have seen a finer display staged by this firm. As a selection, we may enumerate Zanonii (purplish-mauve), Queen Alexandra (scarlet), Muchelney Abbey (scarlet, with a lemon-coloured marking on the lower petal), Thais (magenta), Hannibal (salmon), Mrs. Alfred Mond (a pale flower faintly marked with rose and with a yellow lip), and Ragged Robin. (Silver-Gilt Flora Medal.)

Messrs. DOBBIE & Co., Rothesay and Marks Tey, showed a large number of seedling Dianthus Heddewiggii and D. lacinatus, with a few named varieties, and spikes of Oenothera (Godetia) Schamini, which formed the subject of the Supplementary Illustration in our issue for November 17, 1906. The Dianthus were in great variety; some were heavily marked with crimson, others had slight markings. D. lacinatus had deeply-cut petals. Amongst the named flowers were Salmon Queen, Crimson Bell (a very dark-coloured variety), Snowball, Fireball, and violaceous. (Silver Banksian Medal.)

Mr. HOWARD CRANE, 4, Woodview Terrace, Highgate, London, N., showed miniature-flowered Violas of the type known as Violettas. The flowers were shown in fancy bowls that were filled with sand, and arranged in this manner, they were especially pleasing. Varieties that were particularly noticeable included Violetta, the original variety of this type, a white flower with a yellow blotch on the lower petal; Miss G. Jekyll, yellow, with a deeper shade in the lower petals; Purity, an improved Violetta; and Eileen, deep blue, with a yellow centre. (Silver Banksian Medal.)

Mr. G. REUTHE, Hardy Plant Nursery, Keston, Kent, showed many interesting hardy flowers. We noticed Berberis corallina, Desfontania spinosa, Gloriosa superba, Eugenia myrtifolia, Morina longifolia, Veratrum nigrum, &c. (Bronze Flora Medal.)

Mr. AMOS PERRY, Enfield, Middlesex, showed seasonable hardy flowers, several varieties of Campanula nobilis, Michauxia campanuloides, Cedronella cana, hardy Nymphaeas (including the variety Arc-en-Ciel, the foliage of which is of diverse colours), Lilium superbum, L. Humboldtii magnificum, L. dalmaticum, and other species of Liliums furnished the principal features of an excellent exhibit. (Silver Flora Medal.)

Messrs. G. & A. CLARK, Dover, Kent, displayed an assortment of hardy flowers, spikes of showy Gladioli, vases of Sweet Peas, and others of Border Carnations. Ipomopsis elegans picta has Grevillea-like foliage and long, tubular, red flowers. Amongst the Carnations was noticed a "fancy" variety of merit, with rose markings, named Mrs. Norman Leete. (Silver Flora Medal.)

An excellent display of hardy flowers of well-known species was shown by Messrs. ARTHUR CHARLTON & SON, Summervale Nursery, Tunbridge Wells, Kent. (Silver Flora Medal.)

Mr. GEORGE ARENDS, Ronsdorf, showed a number of hybrid Astilbe japonica, with flowers of many shades of rose. (Silver Flora Medal.)

Sir TREVOR LAWRENCE, Bart., Burford, Dorking (gr. Mr. Bain) showed several interesting plants. Crinum augustum is a large-flowered species; the stout peduncle bears a number of flowers with long segments, suffused with deep claret colour. Arctotis regalis is a hybrid raised from A. aureola × A. grandis. The flowers are as large as those of Chrysanthemum maximum. The ray florets are pure white, with a yellow base; the disc florets are a shade of blue. Crossandra undulatafolia has dense spikes of orange-coloured flowers, that are admirably set off by the deep green, leathery foliage.

A. MARC, Esq., Champneys, Tring (gr. Mr. T. W. Cowburn), showed a variety of Acalypha musaica named Mrs. Marc.

H. W. PERRY, Esq., Upper Norwood (gr. Mr. J. Buckingham) showed plants of Gloxinias, freely flowered in a setting of small Ferns and Isolepis gracilis. (Silver Banksian Medal.)

AWARDS.

FIRST-CLASS CERTIFICATES.

Eucalyptus ficifolia (see *Botanical Magazine*, tab. 7,697).—A branch of this species was shown in flower by W. NORTH ROW, Esq., Cove House, Tiverton, Devon. The individual flowers are about 1½ inch across, and they are crowned by a row of stamens with brilliant scarlet-coloured filaments, to which the flower owes its beauty. The elongated calyx tube is white, and the peduncles are suffused with a reddish tinge in their lower halves. The inflorescence is corymbose, there being from 15 to 20 flowers in a "head." The flower-buds are charming; each is furnished with a kind of operculum, or little lid, which is thrown off and reveals the stamens all radiating towards the centre. The foliage is leathery, and may be likened to that of *Ficus elastica*, but with a very acuminate apex.

Nymphaea "atro-purpurea."—This richly-coloured Water Lily received an Award of Merit on July 31, 1906. A description and full-page illustration of the flower appeared in our issue for February 16, 1907. Shown by Lord HILLINGDON, Uxbridge (gr. Mr. Allan).

AWARDS OF MERIT.

Gladiolus Duke of Richmond.—A broad, expanded flower of a delicate shade of pale rose, with deeper markings of rose. The lower petal is white, with a blotch of yellow, and spotted with rose. Shown by Messrs. KELWAY & SON, Langport, Somerset.

Matricaria inodora "Bridal Robe."—This may be likened to a double white-flowered Pyrethrum roseum. The flowers are about 2½ inches in diameter, and many are produced from a single stem. Shown by Messrs. TITT & SON, Windsor.

Campanula longistyla.—A lax-flowering species, with the tall habit of *C. pyramidalis*, and flowers like those of *C. carpatica*. The hanging, bell-shaped flowers are a shade of heliotrope or blue; each is rather more than an inch in depth, and the same measurement at the mouth. This species forms a suitable subject for planting in big clumps against a background of shrubs. Shown by Sir TREVOR LAWRENCE.

Carnation King Edward VII.—A heavily-marked "fancy" Carnation. The ground is white, and this is blotched and striped with dark crimson. The flowers measure 5 inches across. Shown by Mr. JAMES DOUGLAS.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), Fred J. Hanbury, W. Boxall, R. G. Thwaites, H. A. Tracy, W. P. Bound, J. Charlesworth, W. H. Young, H. G. Alexander, W. H. White, F. J. Thorne, H. Ballantine, J. Wilson Potter, W. Bolton, and De B. Crawshay.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, were awarded a Silver Flora Medal for a group composed principally of rare species of Orchids and hybrids raised at Heaton. Among the former was a splendid plant of *Mormodes luxatum punctatum*, with a fine spike of fragrant white flowers; the curiously-twisted labellum has a purple band, and spotting of the same colour. The elegant little *Pleurothallis macroblepharis*, with gnat-like flowers, was noticed; also *Oncidium nigratum*, with white flowers barred with chocolate colour; *O. trulliferum* and other *Oncidiums*; *Ionopsis utricularioides*, the rare *Maxillaria marginata*, two specimens of the bluish-white *Zygopetalum rostratum*, *Bifrenaria aureo-fulva*; several finely-flowered *Ancistrochilus Thomsonianus* variety *Gentilii*; a fine white *Cattleya Gaskelliana* and other *Cattleyas*, and two examples of the new *Dendrobium regium* (see Awards). The hybrids included good examples of the Heaton strain of *O. Rolfeae* and *O. crispoharryanum*; *O. Elaine*, a pretty cross between *O. cirrhosum* and *O. Harryanum*; some brightly-coloured *Laelio-Cattleya callistoglossa*, *Cattleya F. W. Wigan*, *Sophro-Laelia Marriotiana*, *Sophro-Cattleya Chamberlainiana*, and various *Cypripediums*.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. G. Day), was awarded a Silver Banksian Medal for an effective little group, in the centre of which was the brightly-coloured *Laelio-Cattleya Massangeana*, variety "Harry Goodson,"

which had previously secured an Award. With it were a clear, white form of *Cattleya Gaskelliana alba*, with a fine spike of three flowers; *Miltonia Bleuana*, several *M. Roezlii alba*, the rare violet-lipped *Dendrobium Williamsianum*, a fine variety of *Odontoglossum crispum*, *Laelio-Cattleya elegans*, a prettily-marked form of *Odontoglossum amabile*, &c.

Major G. L. HOLFORD, C.I.E., C.V.O., Westonbirt (gr. Mr. H. G. Alexander), showed a splendid plant of *Miltonia vexillaria*, Hardy's variety, with 46 pretty rose-pink flowers: a dark, crimson mask is seen at the base of the lip; also a grand specimen of *Cattleya Germania superba*, with 32 flowers (see Awards), and a flower of *Laelio-Cattleya elegans* King Edward, a very large purple variety, and the best of its class.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), again showed the fine *Aërides Houlettianum*, "Fowler's variety," for which a First-Class Certificate was given at the meeting held on July 17, 1906. The yellow of the petals and the rose colour of the front of the lip was deeper on this occasion than in the flowers shown last year.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), showed *Cattleya Minnie* (*granulosa* × *Lueddemanniana*), with cream-white sepals and petals tinged with pale lilac and a bright rose-purple lip margined with white; *Laelio-Cattleya* Mrs. Gilbert Blount (*L.-C. Schilleriana* × *C. Gaskelliana*), an improvement on *L.-C. Henry Greenwood*, and having sepals and petals milk-white, tinged with pale purple; disc of the lip lemon-yellow, the sides rose-colour, and the broad front glowing crimson-purple; *Cypripedium Godefroyae leucochilum* "His Majesty," a large cream-coloured flower bearing claret-coloured markings on the sepals and petals; and *C. Emperor of India* (*Harrisianum superbum* × *C. grande*), a large and dark-coloured flower.

DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), showed a small group of hybrid *Odontoglossums*, in which were three of the exhibitor's fine strain of *O. Queen Alexandra*, one of which had the large and beautiful labellum covered with violet-purple blotches; the new *O. Amneris* (*cristatellum* × *Crawshayanum*), and other hybrids.

JEREMIAH COLMAN, Esq., Gatton Park, Reigate (gr. Mr. W. P. Bound), sent *Epi-Laelia longiciliare* (*Laelia longipes* × *Epidendrum ciliare*), a very singular little hybrid with linear sepals and petals of a bluish-white tint and small tri-lobed yellowish labellum.

R. G. THWAITES, Esq., Streatham (gr. Mr. Black), sent *Brasso-Laelia Thwaitesii* (*L. majalis* × *B. Digbyana*), with long and narrow sepals, tinged with lilac, the broader petals being similarly coloured but darker and irregularly broadened in the middle, the distinctly three-lobed lip being white, tinged with rose on the side lobes and tip of the front lobe, both of which have jagged edges.

Messrs. HUGH LOW & Co., Enfield, showed a finely-flowered *Platyclinis filiformis*, *Cattleya Gaskelliana alba*, *C. Parthenia Prince of Wales*, *Cypripedium Wiertzianum*, and *C. Watsonianum*.

Sir TREVOR LAWRENCE, Bart., Burford (gr. Mr. W. H. White), showed *Laelia "Purple May"* (*majalis* × *purpurata*), a distinct hybrid with purplish lanceolate sepals and broader petals, the lip having a white tube with narrow dark lines running from the base to the showy purple front lobe.

AWARDS.

FIRST-CLASS CERTIFICATE.

Dendrobium regium, shown by Sir TREVOR LAWRENCE, Bart., and Messrs. CHARLESWORTH & Co.—A very fine species, described some years ago by Dr. Prain, and recorded as a native of Lower Hindustan, but now shown for the first time. The plant, when not in flower, might be mistaken for *Dendrobium nobile*, which is its nearest affinity. The flowers, also in colour, bear some resemblance to those of *D. nobile*, but the usual dark blotch on the lip is not present in *D. regium*. The largest flower was over 4 inches across, and the petals much broader than in *D. nobile*. The sepals and petals are clear rose colour, the base of the lip being white, with a yellow disc, the pointed front portion being rose of a slightly darker tint than the other segments.

Cattleya Germania superba (*C. granulosa* Schofieldiana × *C. Hardyana*), from Major G. L. HOLFORD. This is a very charming variety, with purplish rose sepals and petals, the front of the lip being ruby-crimson and the whole flower of fine shape and substance.

AWARD OF MERIT.

Miltonia vexillaria Lambeauiana, from Monsieur JULES HYE DE CROM, Conpure, Ghent (gr. Mr. Coen).—A beautiful pure white variety, with lemon-yellow crest, and without the reddish lines usually seen in forms of *M. vexillaria*.

CULTURAL COMMENDATION.

To Mr. H. G. Alexander (Orchid grower to Major G. L. HOLFORD), for a noble specimen of *Cattleya Germania superba* with four spikes bearing together 32 flowers.

To Mr. H. Ballantine (gr. to Baron Sir H. SCHRODER, The Dell, Egham), for a large and finely-grown specimen of *Cypripedium* Lord Derby, with 11 spikes bearing together 34 flowers.

Fruit and Vegetable Committee.

Present: A. H. Pearson, Esq. (in the chair), and Messrs. J. W. Bates, Alex. Dean, Edwin Beckett, R. Lyne, A. R. Allan, James Vert, Wm. Pope, H. Parr, C. G. A. Nix, and J. Jaques.

The principal exhibit was an excellent collection of Gooseberries shown by Messrs. JAMES VEITCH & SONS, LTD., Chelsea. The exhibit embraced close upon 100 varieties; the fruits were shown in dishes, but many cordon and palmate-trained bushes were used as a background to the display. The small plants were heavily cropped with fruits of exceptional quality, and some were very large in size. A prominent position was afforded the variety Langley Beauty, a yellow-skinned berry, of the finest dessert quality. Its companion, Langley Gage, is a white variety, but of equal merit in flavour. Ironmonger, Golden Gem, Yellow Sulphur, Whitesmith, Red Champagne, Early Green Hair, and Bright Venus are all to be recommended for their flavour as dessert fruits. Amongst the largest berries were Dan's Mistake and Marlborough. At one end of the display were fruiting plants of Red and White Currants, with dishes of these fruits, and the black, including Baldwin's Black and Black Naples. Messrs. VEITCH also exhibited a group of Figs, Peaches, and Grapes in pots. The Figs included the varieties White Ischia, Brown Turkey, Brunswick, and White Marseilles, and of Peaches there were Sea Eagle, Thomas Rivers, Dymond, and Belle Bauce. (Gold Medal.)

Messrs. S. SPOONER & SONS, Hounslow, exhibited a small collection of early varieties of hardy fruits, Apples, Plums, Cherries, &c.

Messrs. SUTTON & SONS, Reading, showed three varieties of Cabbage. "Earliest" Cabbage has a large conical solid heart: there were also Tom Thumb and Earliest of All Savoy.

THE LECTURE.

At the afternoon meeting of Fellows the subject of hardy Nymphæas was dealt with in a paper read by Mr. A. Bedford. The cultivation of Water-Lilies is simple; all the plants require is some good soil or rich mud, such as is found at the bottom of naturally-formed ponds and lakes, and plenty of water above them. They should not be allowed to remain for many years undisturbed, but should be dug up occasionally and divided, otherwise, said Mr. Bedford, the foliage will grow so abundantly and vigorously as to quite hide the flowers. Lakes or ponds that are exposed to full sunshine, but sheltered from high winds, afford the most suitable places for planting Nymphæas, but they may be grown and flowered with success in cement tanks, or even in tubs. A lake, if employed for the accommodation of choice aquatic plants, should be kept free from all coarse-growing weeds. In all cases the natural mud at the bottom of the water will form the best rooting-medium for Nymphæas. An easy method of planting is to place the crowns in shallow baskets filled with loam, and to sink these into the proper positions by means of heavy stones, &c. When the basket has rotted, the roots will penetrate through into the bed of the pond. Large plants may be placed in position by merely sinking them with some heavy weight attached. In artificial ponds or tanks,

a copious flow of fresh water is not essential, but a tiny stream should be allowed to enter to prevent a stagnant condition. In small tanks a layer of soil to the depth of 10 or 12 inches should be spread over the bottom, and in larger structures little mounds or hillocks should be formed, by piling a few sods. A suitable rooting medium for Nymphæas consists of good, turfy loam, plenty of half-decayed leaves, and some sharp sand. This should be prepared a considerable time before it is required. Manure should not be used. The best season for planting is the spring, at about the end of April or the beginning of May, for if planted at that time they will flower before the current summer is passed. The flowering season is from early in June to October. The depth of water should be 4 feet for the stronger-growing kinds, and not less than 1 foot for the smaller varieties. All the Marliac type should be planted in deep water.

Some of the finer varieties are slow-growing, and are propagated with difficulty from side crowns, but others are easily increased by this means. Varieties of the N. Laydekeri section are extremely difficult to increase. Some varieties are easily raised from seed, which should be sown as soon as it is ripe. For cultivating in tubs, the Laydekeri type is the more suitable, and of these the smallest forms are the best. The tubs should be wide at their mouth and about two feet in depth. A small stream can be made to feed a series of tubs, and thus save much labour. The tubs should be sunk into the ground, as, by this system, the plants can be easily protected by boards, &c., in winter.

Aphides are sometimes troublesome, and should be destroyed by tobacco powder, or they can be washed off by a stream from the hose.

Water-fowl and water-rats should not be permitted near these plants.

A malformation is a common cause of trouble to Nymphæas; the stem becomes fasciated, and then produces nothing but foliage. The rhizome in this case should be cut into very small portions, and be planted afresh.

Among the best varieties are gloriosa (rich carmine), Marliacea chromotella, M. odorata sulphurea (two of the best yellow-flowered varieties), Ellisiana, atro-purpurea, sanguinea, and William Falconer (dark-flowering kinds), James Brydon (rosy-crimson), Gladstoniana, and Marliacea albida (white).

BRITISH ASSOCIATION.

SECTION K.—BOTANY.

AUGUST 1.—The presidential address in this section was delivered on the above date by Professor J. BRETLAND FARMER, F.R.S., who dealt with certain aspects of botany, which, as he himself said, belonged rather to the nebulous region of speculation than to the hard ground of facts.

Professor FARMER laid stress upon the advantage of maintaining a physiological attitude of mind towards the phenomena presented by the vegetable kingdom, since it involved the necessity of constantly attempting to analyse the problems which presented themselves to students of botany, as far as possible, into their chemical and physical components. The explanation of the advances which chemistry and physics had made lay essentially in the fact that an analysis of the factors involved had enabled the investigator intelligently to interfere with and so to control the mode of presentation of the reacting bodies. The botanists' special problems, including the obscure matters of organisation, heredity, and the like, were assuredly susceptible of a similar method of treatment. They could never expect to get further than to be able to modify the mode of presentation to each other of the materials that interacted to produce what were called the manifestations of life, but the measure of their success would depend on the degree in which they were successful in accomplishing that. Indeed, until they had analysed the nature of the reacting bodies and also the particular conditions under which the reactions themselves were conducted, they were avoiding the first steps in the direction of ultimate success. In this connection he thought that much harm was done by the toleration of an uncritical habit of mind as to the significance of structures which were regarded as adaptive responses to stimuli of various sorts. It was not enough to explain the appearance of a structure on the ground of its utility. One of the

commonest responses to the stimulus of wounding in the higher plants was the formation of a layer of cork over the injured tissue. That was a reaction of great utility, checking as it did the undue evaporation of water and the entrance of other parasitic organisms. Yet it could not be seriously maintained that the obviousness of those advantages satisfactorily explained why the cork layer was produced. It seemed to him that an investigation of the real underlying conditions which governed such a modified reaction would be of immense value, and that the information to be gained therefrom as to the nature of the chemical process involved would prove to be of first-rate importance in tracking to their sources some of the factors that influenced the course of carbohydrate metabolism within the cell. He devoted the rest of the address mainly to the discussion of certain abstruse problems relating to karyokinesis—i.e., the changes which take place in the nucleus of a living cell when undergoing the process of division; and concluded by observing that the problems which arose were seen, when grappled with at close quarters, to resolve themselves more and more into questions of chemistry and physics. The reactions that went on in the living body were obviously guided as to the particular directions they took by the apparatus or mechanism of the individual organism. When the conditions for the manifestation of life were satisfied, what would be produced depended partly on the structure of the apparatus itself (i.e., on the hereditary organisation), partly on the nature of the substances fed into the apparatus, and, finally, on the physical conditions under which it was working. It was probably along the last two lines that investigation would continue to be pursued with more immediate profit; but the goal would not be finally reached till they had solved the problem as to the nature of the organisation itself. *Times*, August 5.

BISHOPS STORTFORD HORTICULTURAL.

JULY 31.—The 38th annual exhibition of the above society took place on this date. The show was a great success, the only weak classes being those in the hardy fruit section. Some of the cut flowers, notably Sweet Peas and Roses, showed damage from the recent storms, but those in the herbaceous collections were very fine. Mr. G. Beech, gardener to JOHN BARKER, Esq., M.P., won the Silver Cup and the Royal Horticultural Society's Silver Medal for the best collection of these flowers.

GROUPS.

These were an excellent feature, some splendid exhibits being staged. The premier award in the large class was won by the Right Hon. Lord HOWARD DE WALDEN, Audley End, Saffron Walden (gr. Mr. Jas. Vert); 2nd, Mr. Beech, gardener to J. BARKER, Esq., M.P., The Grange, Bishops Stortford.

In the smaller class for a group of plants, Mr. F. A. TAYLOR, Bishops Stortford, won the 1st prize, and he was followed by Mr. GOODWIN BARNES. The 1st prize for Begonias was won by Mr. F. A. TAYLOR with splendid plants. Mr. GOODWIN BARNES was a close 2nd with plants less advanced in flower, but of excellent quality.

Mr. J. VERT had the best collection of foliage plants. Mr. WOODS showed the best Ferns, and Mr. TAYLOR had the best half a dozen single and double-flowering Begonias. Mr. TAYLOR also showed the best Gloxinias.

TABLE DECORATIONS.

Decorated tables are a special feature at this show. There were over 30 tables on this occasion. The premier award was gained by Miss CLAYDEN, Saffron Walden. This lady used Carnation flowers, Grasses, and Heuchera sanguinea.

CUT FLOWERS.

Roses were well shown, considering the adverse season. Mr. F. E. CROFT had splendid blooms in the principal class for these flowers, and was awarded the 1st prize. In a small class, Mr. ROSS and Mr. GEE were the leading exhibitors. Sweet Peas formed a pleasing attraction. For a collection of these flowers, J. BARKER, Esq., M.P., was an easy 1st prize winner, having grand blooms and many varieties; Mr. E. E. PEARSON was awarded the 2nd prize.

Mr. P. L. JOHNSON won the prizes offered by Messrs. Eckford. In a class for 12 blooms of Chrysanthemums, Mr. JOHNSON was the only exhibitor. In the open class for flowers of herbaceous or bulbous plants, Messrs. PAUL & SON, Cheshunt, had the winning exhibit.

FRUIT AND VEGETABLES.

In a class for the best collection of eight dishes of fruits, some excellent produce was staged. Mr. W. Harrison, gardener to Col. ARCHER HOUBLON, Hollingbury Place, was awarded the 1st prize; he had splendid Grapes, Peaches, Cherries, Nectarines, Melons, and Strawberries. 2nd, Mr. MEYER.

Colonel BALFOUR had the best Black Grapes in a strong competition, and this exhibitor showed the best bunches of Muscat of Alexandria; also the best of Madresfield Court, and the premier dish of Peaches.

One very large tent was entirely devoted to vegetables, and competition was keen in many of the classes. In the class for a collection, six exhibitors staged excellent produce. Mr. Jeffries, gardener to J. BALFOUR, Esq., was a good 1st, having splendid Cauliflowers, Quite Content Peas, an excellent dish of Perfection Tomatoes, Snowball Turnip, Model Carrots, and shapely tubers of Syon House Prolific Potatoes. 2nd, Mr. BEECH.

In the smaller classes Messrs. GEE, KINDELL, and W. HOLLAND were the leading prize-winners.

HONORARY EXHIBITS.

A noteworthy group of fruit trees in pots was staged by Messrs. RIVERS & SONS, Sawbridge-worth. They showed grand examples of their new Peregrine Peach, Apricots in variety, Emperor Francis and Turkey Black Heart Cherries, Figs, the small but delicious Gradiska Grape, &c. Messrs. PAUL & SON, Cheshunt, showed splendid Roses. Messrs. KING, Coggeshall, displayed Sweet Peas. Messrs. BURCH, Peterborough, exhibited Roses. Messrs. CHAPLIN, Waltham Cross, showed Sweet Peas. Mr. DIXON, Bishops Stortford, staged foliage and flowering plants in variety. Messrs. RIDING, Chingford, had an assortment of Violas. Mr. J. DOUGLAS, Great Bookham, staged a fine collection of Carnations.

SCOTTISH HORTICULTURAL ASSOCIATION.

AUGUST 3.—At the invitation of Messrs. Storrie and Storrie, some 50 members of the above association visited the firm's nurseries at Glencarse, in the Carse of Gowrie, on the above date.

After the nursery had been inspected by the members a conference was held, and the proceedings were largely devoted to a discussion of the summer pruning of fruit trees.

CATALOGUES RECEIVED.

CLIBRANS, Altrincham & Manchester—Strawberries, Vegetables and Flower Seeds.

DAVID W. THOMSON, 113, George Street, Edinburgh—Bulbs.

T. SMITH, Daisy Hill Nursery, Newry, Ireland—Hardy Bulbous Plants.

W. BULL & SONS, Chelsea, London—Bulbs.

AUSTIN & McASLAN, 89, Mitchell Street, Glasgow—Bulbs, Roots and Plants.

C. J. ELLIS, Weston Nurseries, Knightstone Road, Weston-Super-Mare—Bulbs.

THOS. DAVIES & Co., Wavertree, Liverpool—Bulbs.

DEBATING SOCIETY.

GUILDFORD AND DISTRICT GARDENERS'.

—On Wednesday, July 17, this society's third annual show was held at Sutton Place, by kind invitation of Lord and Lady Northcliffe. The attendance of visitors was a very large one. The show was favoured with ideal weather, and the general arrangements were admirable. There were 74 exhibits by 33 members, as compared with 66 and 28 respectively last year, while the quality was far in advance of anything the society has produced before. The largest exhibit was that staged by Mr. J. Goatley, gardener to Lord and Lady Northcliffe, who showed a magnificent collection of plants, flowers, vegetables and fruit.

MARKETS.

COVENT GARDEN, August 7.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—ED.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Alstroemerias, per dozen bunches	2	0-4	Lily of the Valley, p. dz. bunches	4	0-6
Asters, per dozen bunches	3	0-4	— extra quality	10	0-15
Bouvardia, per dz. bunches	2	0-3	Marguerites, white, p. dz. bunches	2	0-3
Calla aethiopica, p. dozen	2	0-3	— yellow, per dz. bunches	1	6-2
Carnations, per dozen blooms, best American various	1	6-3	Mignonette, per dz. bunches	2	0-3
— smaller, per dozen bunches	9	0-12	Myosotis, per doz. bunches	1	6-2
— Malmaisons, p. dozen blooms	6	0-10	Odontoglossum crispum, per dozen blooms	2	6-3
Cattleyas, per doz. blooms	12	0-15	Pancratiums, per dozen fls.	3	0-4
Chrysanthemum maximum, per dozen bunches	1	0-2	Pelargoniums, show, per doz. bunches	4	0-6
Coreopsis, per doz. bunches	2	0-3	— Zonal, double scarlet	4	0-6
Cornflower, per dz. bunches	1	0-2	Pinks	1	0-3
Dahlias, per dozen bunches	3	0-4	Poppies, Iceland, doz. bunches	4	0-8
Eucharis grandiflora, per doz. blooms	2	0-3	— Shirley	2	0-3
Gaillardias, per dz. bunches	2	0-3	Pyrethrums, per dozen bunches	2	0-4
Gardenias, per doz. blooms	2	0-8	Rhodanthe, per dz. bunches	3	0-4
Gladiolus, The Bride, per doz. bunches	3	0-5	Roses, 12 blooms, Niphetos	1	0-3
— Brenchleyensis	3	0-5	— Bride-maid	2	0-3
— various	4	0-9	— C. Testout	2	0-3
Gypsophila elegans p. dz. bunches	2	0-3	— General Jacqueminot, per doz. bunches	1	0-2
— paniculata, per dozen bunches	2	0-3	— Marechal Niel	1	6-3
Iris, German, per doz. bunches	4	0-6	— Kaiserin A. Victoria	1	6-3
— Spanish, p. dz. bunches	4	0-9	— Mr. J. Laing	1	0-3
Lapageria alba, per dozen	1	0-16	— C. Mermet	1	0-3
Lilium aratum	2	0-3	— Liberty	2	0-4
— candidum, beh.	1	0-2	— Mad. Chateau	1	0-3
— lancifolium, rubrum and album	1	6-2	Saponaria, per dz. bunches	1	6-2
— longiflorum	2	0-3	Statice, per dozen bunches	2	6-3

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Adiantum cuneatum, per dozen bunches	4	0-6	Galax leaves, per dozen bunches	2	0-2
Asparagus plumosus, long trails, per doz. bunch	8	0-12	Hardy foliage (various), per dozen bunches	2	0-6
— medium, bunch	1	6-2	Ivy-leaves, bronze long trails, per bundle	1	6-3
— Sprengerii	0	6-1	— short green, doz. bunches	2	0-3
Berberis, per doz. bunches	2	0-2	Moss, per gross	4	0-5
Croton leaves, beh.	1	0-1	Myrtle (English), small leaved, doz. bunches	4	0-6
Cycas leaves, each Fern, English, per dozen bunches	1	0-2	— French, dozen bunches	1	0-1
— French, dozen bunches	1	0-3	Smilax, p. dz. trails	1	6-2

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Ampelopsis Veitchii, per dozen	6	0-8	Euonymus, per dz. Ferns, in thumbs, per 100	7	0-10
Aralia Sieboldi, dz. larger	9	0-12	— in small and large 60's	12	0-20
Araucaria excelsa, per dozen	12	0-30	— in 48's, per dz.	4	0-10
Aspidistras, green, per dozen	18	0-30	— in 32's, per dz.	10	0-18
— variegated, dz.	30	0-42	Ficus elastica, doz.	8	0-10
Asparagus plumosus nanus, doz.	9	0-12	— repens, per doz.	4	0-6
— Sprengerii, dz.	9	0-12	Fuchsias, per doz.	4	0-6
— tenuissimus, per dozen	9	0-12	Heliotropiums, per dozen	3	0-4
Calceolarias, yellow	4	0-8	Hydrangea Thos. Hogg, per doz.	12	0-18
Campanulas, p. dz.	6	0-9	— Hortensia, per dozen	8	0-12
Clematis, per doz.	8	0-9	— paniculata, per dozen	9	0-18
— in flower	12	0-18	Kentia Beilmoreana, per dozen	12	0-18
Cocos Weddelliana, per dozen	9	0-18	— Fosteriana, dz.	12	0-21
Coleus, per dozen	2	0-4	Kochia scoparia, per dozen	6	0-9
Coreopsis, per doz.	6	0-10	Latania borbonica, per dozen	12	0-18
Crasulads (Kalanchoe), per dz.	9	0-12	Lilium longiflorum, per dz.	12	0-24
Crotons, per dozen	12	0-30	— lancifolium, per dozen	12	0-18
Cyperus alternifolius, dozen	4	0-5			
— laxus, per doz.	4	0-5			
Dracenas, per doz.	9	0-24			

Plants in Pots, &c.: Average Wholesale Prices (Contd.)

	s.d.	s.d.		s.d.	s.d.
Lily of the Valley, per dozen	10	0-12	Pelargoniums, — Zonals, per dz.	4	0-6
Lobelia, per dozen	5	0-6	— show	6	0-9
Marguerites, white, per dozen	4	0-8	Petunias, double, dz.	4	0-8
— yellow	12	0-18	— single, per dz.	3	0-6
Mignonette, per dozen	6	0-9	Rhodanthe, per dz.	4	0-6
Pelargoniums, Ivy-leaved, Mde. Crousse and Galilee, p. dozen	4	0-6	Roses, H.P.'s, dz.	12	0-24
			— Ramblers, each	3	0-7
			Selaginella, dozen	4	0-6
			Spiraea japonica, dz.	5	0-8
			Verbena, Miss Willmott, doz.	4	0-6
			Zinnias, per dozen	3	0-4

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples, per box, Tasmanian	12	6-13	Melons (Guernsey), each	0	9-2
— Sturmer Pippins	12	6-13	— French, Rock, each	2	6-3
— French Crabs	11	0-12	— Valencia, per case	5	6-6
Apricots (French), per box	1	2-14	— Cantaloupe, each	0	3-0
— French, cases	2	0-26	Nectarines (English), per doz.	8	0-15
— French, ½ sieve	5	0-56	— 1st quality	2	0-4
Bananas, bunch: — No. 2 Canary	5	0-—	— 2nd, per box	0	10-1
— No. 1	5	6-6	Nuts, Cobnuts, per doz. lb.	2	6-3
— Extra	6	6-76	— Almonds, bags	5	4-0
— Giants	8	0-—	— Brazils, new, per cwt.	40	0-42
— Jamaica	5	0-56	— Barcelona, bag	3	2-6
— Loose, per dz.	0	9-13	— Cocoa nuts, 100	12	0-17
Cherries (English), ½ sieve	5	0-9	Oranges, per case: — Natal	6	0-8
— ½ sieve	3	0-5	— Naples	10	6-12
Cranberries, case	8	0-86	— Navels	10	0-10
Currants (English), Red, ½ sieve	2	0-3	— Murcia, box	10	0-14
— Black (English), ½ sieve	6	0-6	Peaches (English), per dozen	6	0-9
— White, p. peck	1	9-2	— 1st quality	6	0-9
Dates (Tunis), doz. boxes	2	6-—	— 2nd	1	0-3
Figs (Guernsey), p. dozen	1	0-4	— French, p. box	1	3-1
Gooseberries (English), ½ sieve	1	6-3	Pears (French), Williams Bon Cretien, p. box	4	9-5
Grape Fruit, case	11	6-13	— (Californian), per box	9	6-10
Grapes (English), Hambro's, p. lb.	0	6-1	Plums (English), p. ½ sieve	3	0-4
— Alicante, per lb.	0	8-1	— French, p. box	0	10-1
— Gros Maroc, per lb.	0	9-13	— French, ½ sieve	3	0-8
— English Muscats, per lb.	0	9-26	— Italian, basket	1	6-19
— Canon Hall, per lb.	2	0-4	Gages (French), per box	1	3-1
— Belgian Hambro's, per lb.	0	6-9	— Italian, basket	1	6-19
Lemons: — Messina, case	10	0-14	— French, ½ sieve	5	6-12
— Naples, per case	18	0-23	Pineapples, each	2	0-8
Lyches, per box	1	0-—	Raspberries (English), handle	1	6-1
Mangoes, per doz.	6	0-12	— basket	1	6-1
Mandarins, Natal	1	3-19	— English, p. dz. punnets	3	0-5
Naartjes, box	6	0-8	Strawberries (English), per lb.	0	6-9

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes (French), per dozen	2	0-26	Mint, doz. bunches	0	9-1
Aubergines (French), per doz.	1	0-13	Mushrooms (house)	0	8-10
— Bean (French), per pad	3	0-4	— per lb.	0	8-10
— Broad (English), p. bushel	2	0-—	— buttons, per lb.	0	10-—
— Jersey, per lb.	0	6-—	— "Broilers" p. lb.	0	5-0
— French, packet	0	3-04	Mustard and Cress, per dozen pun.	1	0-16
— Home-grown, per lb.	0	6-—	Onions (Lisbon), case	5	0-—
Beetroot, bushel	1	3-16	— pickling, per bushel	2	0-26
Cabbages, per doz.	0	9-1	— Spring, pr. dz. bunches	1	6-2
Cabbage Greens, bag	1	0-16	Peas (English), per bushel	1	6-26
— red, per dozen	2	0-—	— English, p. bag	4	0-5
Carrots (English), dozen bunches	1	0-16	Parsley, 12 bunches ½ bushel	1	0-16
— washed, p. bag	3	0-36	Potatoes (Canary), per cwt.	8	0-9
Cauliflowers, p. dz.	2	0-26	Radishes (Guernsey), per dozen	0	4-06
Chow Chow (Sichuan edule), p. dozen	3	0-—	Sakafy, p. dz. bdls.	3	6-—
Cucumbers, per dozen	1	6-26	Spinach, English, per bushel	0	9-10
Endive, per dozen	2	0-—	Tomatoes: — French, p. crate	3	0-36
Horseradish, foreign, per doz. bundles	13	0-14	— selected, per dozen lbs.	3	0-38
Leeks, 12 bundles	1	6-—	— small selected, per dozen lbs.	2	6-29
Lettuce (English), Cos, per score	0	4-06	Turnips (English), doz. bunches	2	0-3
Marrow (English), per tally	3	0-4	Watercress, per doz. bunches	0	4-06

REMARKS.—English Black Currants have advanced considerably in price during the week, but there is only a moderate demand for the Red and White varieties. Pears Williams Bon Chretien, from France, and Beurré Hardy, from California, are now obtainable. French "Gages" are arriving in fine condition, and the dessert varieties are realising high prices. Lemons are much cheaper than is usual at this season of the year. Specialities in fruits seen in the market are the Naartjes or Mandarin Oranges from Natal and the Cape. P. L., Covent Garden Market, August 7, 1907.

POTATOS.

Kents, 3s. to 4s. per cwt.; Bedford's, 70s.; Lincolns, 60s. to 70s.; Blacklands, 60s. to 65s. per ton. Supplies are large and the demand is fair. J. D. C., Covent Garden, Aug. 7, 1907.

COVENT GARDEN FLOWER MARKET.

The flower market is very dull, and many of the salesmen are on holiday. Zonal Pelargoniums are still obtainable in both 60's and 48's pots. Plants of Ivy-leaved varieties in 48's pots are well flowered. Verbena Miss Willmott is in as good a condition now as at any time during the season. Coreopsis is very pretty. Campanula isophylla alba and C. Mayi are now at their best. Mignonette, Spiraea japonica, Marguerites, Heliotropiums, Fuchsias, Asters, Hydrangea Hortensia, and H. paniculata grandiflora, Crassulas and Coleus are the principal plants seen on the stands. Kochia scoparia (or trichophylla) does not sell so well as when it was first introduced. I find there is still some confusion regarding the names. The supply of Rambler Roses is not yet finished, some of the plants are rather far advanced. Ferns, Palms, and other foliage plants are well supplied.

CUT FLOWERS.

Trade is bad and much material has to be wasted. Asters are already seen in large quantities; those imported from France affect the prices for the home-grown flowers. Some fairly good Chrysanthemums are arriving. Blooms of Chrysanthemum maximum of the improved varieties are seen in immense quantities. Statice in white, blue and yellow colours is over plentiful. If desired to keep this flower dried for the winter it should be purchased before it is too far advanced, then it will keep its colour. Gypsophila paniculata is seen in large heaps, its market value has depreciated very much. Irises are not quite over. Gladioli are abundant, and G. Brechtleysensis has dropped in price. Roses are still very abundant, and it is only the very best quality blooms that make reasonable prices. Good blooms of Kaiserin Augusta Victoria could be purchased at 3d. per bunch on Tuesday morning, and there was no improvement in prices this morning. Carnations are equally abundant, and large quantities are from the open ground. The variety Raby Castle is grown largely, and another seen is Duchess of Fife. The perfume of Lavender now pervades the market, and the hawkers deal largely in this flower. A. H., Covent Garden, Wednesday, August 7, 1907.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending August 3, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The weather was changeable and unsettled over the whole Kingdom, but rain was more frequent in the north and west than elsewhere. Thunderstorms occurred in the south-east of Scotland, thunder at Donaghadee on Monday, and in many places in the Midlands and south-east of England on the following day.

The temperature was below the normal in all districts, the deficit ranging from 4° in Scotland E. to rather less than 1° in Ireland S. The highest of the maxima, recorded on irregular dates, were 75° in England E. and the Midland Counties, and 73° in several other districts. In Scotland N. and E. the thermometer only reached 69°, and in Ireland N. 68°. The absolute minima were low for the time of year. In Scotland E. the thermometer fell to 35°, in Scotland N. to 37°, and in England E. and S.W. to 39°. Elsewhere the minima ranged from 40° in many parts of England and in Scotland W. to 44° in Ireland N., and to 46° in the English Channel. The lowest grass readings reported were 28° at Balmoral and 32° at Llangammarch Wells.

The mean temperature of the sea was lower than during the preceding week on many parts of the Irish and Scottish coasts—as much as 4° at Lamlash. The actual values ranged from 63.4° at Seafeld and 62.6° at Margate to 51.7° at Lerwick.

The rainfall varied much in different parts of the Kingdom. In Ireland there was a considerable excess, and in England N.E. and the English Channel a considerable deficit. More than an inch was measured at Arlington on Friday, and also along the west coast of Ireland both on Friday and Saturday.

The bright sunshine was below the average over the Kingdom generally. The percentage of the possible duration ranged from 43 in the English Channel and England E., and 42 in England S. to 25 in Ireland N., 22 in Scotland E., and to 18 in Scotland N.

THE WEATHER IN WEST HERTS.

Week ending August 7.

Eleven-and-a-half hours continuous rain.—Taken as a whole the past week proved cold for the time of year. On the warmest day the temperature in the thermometer screen rose to 74°, which is only about 3° above the average for the beginning of August. On the other hand, on the first two nights of the week the thermometer exposed on the lawn registered readings only 5° above the freezing point. At 2 feet deep the ground is at the present time 1° colder, and at 1 foot deep 2° colder, than is seasonable. Rain fell on three days, but to the total depth of only half an inch. Nearly the whole of this amount, however, was deposited during the night of the 2nd, when rain began to fall at 7 p.m., and continued without intermission until 6.30 a.m. on the following day, or for 11½ hours. This fall proved sufficient to cause a few drops to trickle daily through the percolation gauge on which short grass is growing, while about a gallon of rain-water has passed through the bare soil gauge. The sun shone on an average for 7½ hours a day, or for 1½ hours a day in excess of a seasonable duration—making this the brightest week as yet of the present summer. The winds were variable in strength, but in no hour did the mean velocity exceed 14 miles—direction west. There was about a seasonable quantity of moisture in the air at 3 p.m.

JULY.

Very cold, calm and gloomy, with an exceptionally humid atmosphere.—This proved the coldest July experienced here in the past 19 years. During the course of it there occurred only seven unseasonably warm days, and only nine warm

nights. On the warmest day the temperature in the thermometer screen rose to 77°, and on the coldest night the exposed thermometer fell to within 3° of the freezing point, both very low extreme readings for the month. Rain fell on 16 days, and to the aggregate depth of 2½ inches, which is slightly in defect of the July mean. More than half of the total rainfall was deposited on two consecutive days towards the end of the month. The sun shone on an average for only 5½ hours a day, or for more than an hour less than a seasonable duration. During the past 21 years there have been only three other Julys as gloomy. It was also a remarkably calm month; indeed, with one exception, the calmest July I have yet recorded here. The most noteworthy feature, however, was the unusual quantity of moisture in the atmosphere. At 9 o'clock in the afternoon the mean amount was as much as 9 per cent. in excess of a seasonable quantity for that hour, or greater than in any July during the past 19 years. E. M., Berkhamsted, August 7, 1907.

Obituary.

GEORGE MAY.—We regret to record the death of this well-known nurseryman, at his residence at Upper Teddington, on August 1. During the winter of 1906-7, the late Mr. May suffered a bad attack of influenza. Coming to Teddington nearly 30 years ago, Mr. May engaged in the cultivation of plants for supplying flowers for the market, also Ferns for market, and built up a business of considerable magnitude. For nearly a quarter of a century he was one of the best-known personalities in Covent Garden Market. He was one of the first market growers to send blooms of red Roses to market, and the first consignments of these, General Jacqueminot, were sold at prices varying from 20s. to 30s. per dozen blooms wholesale. Adiantum Ferns, Lily of the Valley, and Roman Hyacinths were other subjects the deceased made specialities. In the cultivation of the Eucharis for market, it is doubtful whether his success has been equalled. More recently Mr. May will be remembered as one of the original introducers of the popular Carnation Uriah Pike, and of this variety alone some hundreds of thousands of plants in all sizes from rooted cuttings, to plants three years old and 4 feet in height were accommodated in his nursery. Locally, Mr. May will long be remembered for his large-hearted generosity, and it is doubtful whether his many kindly acts or his genial presence will be missed most. The funeral took place at the Teddington Cemetery at 3 p.m. on Tuesday, August 6. Various public and philanthropic bodies were represented at the funeral, together with a large number of prominent market growers and nurserymen. Mr. May was sixty-two years of age at the time of his death, and he leaves a widow.

HENRY WILLIAMS.—We are informed of the death of this nurseryman, a member of the firm of H. Williams & Sons, East Finchley, and Covent Garden Market. Deceased, who was in his 84th year, passed away on the 30th ult., after an illness extending over 10 days. He was a younger brother of the late Mr. B. S. Williams, of Holloway, and in former years was in practice in private gardening, being in 1857 in the service of Mr. Fairey, of Liverpool. Whilst at Liverpool, Mr. Williams was the first to flower Cypripedium Fairrieanum in this country, and here he produced a Black Prince Pineapple weighing 15½ lb. Deceased was a good plantsman and a successful exhibitor. He opened the nursery business at East Finchley in 1858, and for 42 years has been a contributor of produce to Covent Garden Flower Market. His specialities were Hyacinths, Tulips, Azaleas and Primulas. The firm will be carried on by his two sons. A third son is engaged as salesman in Covent Garden Market.

A SWEET PEA TRIAL.—On Wednesday, July 17, a number of persons interested in this flower visited the seed grounds of Messrs. E. W. KING & Co., Coggeshall, to inspect a trial of more than 300 rows of these plants. The visitors were shown nearly 20 acres of Sweet Peas growing for seed purposes, and over 300 trial rows.

THE LATE DR. MASTERS.—The owners of the Restiaceæ and other dried specimens of plants sent to the late Dr. MASTERS for identification are asked to write to Mrs. MASTERS at Mount Avenue, Ealing, to claim their property, as the botanical specimens may have to be disposed of shortly.

ANSWERS TO CORRESPONDENTS.

* * * The Editor will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for forming Supplementary Illustrations to this Journal.

ANIMAL IN POND: *Nymphaea*. The trouble is probably caused by water-rats.

BOOKS: *Beginner. Fruit, Flower, and Vegetable Trades Journal*, 1d. weekly: Biggs & Co., 139-140, Salisbury Court, Fleet Street, E.C.; *Fruit Grower, Fruiterer, Florist and Market Gardener*, 1d. weekly: Geo. Tucker, 1, 2, and 3, Salisbury Court, Fleet Street, E.C.

BOWLING GREEN: J. C. We find no trace of fungus, but the turf is covered with a common Lichen (*Peltigera*). This points to a stagnant condition of moisture in the soil. See that the land is properly drained, and encourage the growth of grasses by the use of nitrogenous manures. The grasses will in time crowd out the Lichen if the conditions for the growth of the former are favourable. The shrub is probably *Cotoneaster frigida*.

CHRYSANTHEMUMS DYING: Z. Y. X. The cuttings have been inserted too deeply, and they have in consequence formed a very indifferent root-system. Some of them also bear evidence of injury by insects. If you suspect the presence of wire-worm in the soil, apply a moderate dressing of gas-lime when the plants are removed, and allow the land to remain fallow for a few weeks. Bulbs are certainly liable to be eaten by this insidious pest if they are planted.

DISCOLOURED APPLE LEAVES. W. H. W. The leaves exhibit no trace of fungi, or apparently of insects. The cause of discolouration must therefore exist in the soil or result from injury by cold.

FIGS DISEASED: C. I. The plants are attacked by a fungus, *Cercospora Bolleana*. Burn the badly affected leaves and spray the remaining ones with permanganate of potash, or some other suitable fungicide.

FOLIAGE BEGONIAS: H. H. Probably your plants are old and declining in vigour. It would be well to raise fresh stock by division of the roots or by propagation from leaves. The treatment you describe seems to be quite correct. These plants do not like frequent waterings overhead, especially when grown in a cool atmosphere. Afford them shade from bright sunshine.

INSECTS EATING ROOTS: J. M. The small white insects attacking the roots of your plants belong to the genus *Lipura*. They are very nearly allied to the "Springtails," or *Poduridæ*, but they have no jumping apparatus. To destroy them, saturate the soil with some manure, such as nitrate of soda, or apply soot in as great a strength as the plants will stand. When the ground is cleared of crops, dress it with gas-lime or freshly burnt lime, and allow it to remain fallow for a period.

MELONS WITH SMALL SKIN-DEEP CRACKS: R. H. The conditions you have described are quite in accordance with the general practice. As you state that the plants appear healthy, the small cracks need not cause you alarm, it being merely the formation of what is known as "netting," and this adds greatly to the appearance of the fruit when ripe. It is, however, necessary at this stage to guard against any excess of moisture at the roots or in the atmosphere. Do not allow moisture to condense upon the fruit. If an excess of moisture is allowed in the atmosphere, the netting not infrequently takes the appearance of cracks, and these may develop a rusty appearance. Ventilate the structure freely, but with care, during the day and night, and keep the hot-water pipes sufficiently warm to cause a free circulation of dry and warm air in the house.

PEACH SHOOT DISEASED: *Derby*. The fruits and foliage are attacked by the Peach mildew, *Oidium leucoconium*. Smear flowers of sulphur made into a paste on the hot-water pipes, and ventilate more freely the house in which the trees are growing. Prevent an excess of moisture condensing on the leaves.

R.H.S. EXAMINATIONS: A. D. B. The names of the successful candidates are published in a pamphlet issued by the Royal Horticultural Society, and this can be obtained for a small sum from the secretary, Vincent Square, Westminster.

NAMES OF FRUIT: *J. C.* You should send foliage when submitting Peaches for naming, and not fewer than two fruits. The glands on the foliage are a valuable determining factor in naming these fruits. Your variety is probably Thames Bank.

NAMES OF PLANTS: *E. J. G.* 1, *Erigeron speciosus*; 2, *E. multiradiatus*; 3, *E. sp.*; 4, *Veronica longifolia rosea*; 5, *Dianthus deltoides*; 6, *Verbascum Blattaria*.—*G. W.* *Teucrium montanum*.—*Y. O.* 1, *Malva moschata*; 2, *Eryngium planum*; 3, *Spiræa callosa*; 4, *Phuopsis stylosa*; 5, *Chrysanthemum maximum*; 6, *Veronica virginica*.—*H. A.* 1, *Thalictrum glaucum*; 2, *Clematis recta*; 3, *Cephalaria tatarica*; 4, *Lotus siliquosus*; 5, *Scabiosa Pteroccephala*.—*A. J. S.* 1, *Fagus sylvatica v. heterophylla*; 2, *Sidalcea spicata*.—*F. L.* 1, *Pyrus Aria* var. *majestica*; 2, *Nyssa biflora*; 3, *Artemisia vulgaris*.—*W. G. B.* 1, *Carpenteria californica*; 2, *Rhus Cotinus*; 3, *Coriaria japonica*; 4, *Philadelphus purpureus maculatus*; 5, *Spiræa Thunbergii*; 6, *Clematis*

they commence to flower, when it will be better to remove them to a cooler atmosphere. These kinds are much more delicate than *R. africana* and will not thrive under the ordinary treatment accorded that species.

ROSES WITH DISEASED FOLIAGE: *J. C.* Your Rose leaves are badly attacked with the common "Rose leaf blotch," caused by the fungus *Actinonema Rosæ*. As far as possible, the diseased leaves should be collected and burnt. Spraying with diluted copper sulphates has been recommended. Some cultivators prefer to use *Eau Celeste*; this is made by dissolving two pounds of sulphate of copper in two gallons of hot water. In another vessel dissolve 2½ pounds of carbonate of soda in a like manner. Mix the two solutions, and when all reaction has ceased, add a pint and a half of ammonia, and dilute the mixture to 22 gallons.

CROWN OR MUMMY PEA: *X. Y. Z.* This is a singular variety of the common garden Pea.

is first tested, it is almost impossible to know when the roots require more water. In respect to the outside border we advise you to cut out a trench in the first week of October, at a distance of 4 feet from the vines, making this trench 3 feet wide and deep enough to extend to the drainage. Cut off all roots that are met with and refill the trench. The inside border can be treated in the same manner after two years have elapsed. Meanwhile protect the outside borders from rain by covering them with frame lights or any suitable material. Do not apply any more water to the roots this season.

TOMATO LEAVES DISEASED: *Fletcher.* The plants are affected by a fungus (*Cladosporium fulvum*). Spray the foliage with the Bordeaux-mixture, and destroy the badly affected plants by burning. Afford more ventilation to the structure in which they are growing, and keep the plants under drier conditions.

UTRICULARIA MONTANA: *F. Denis.* This plant



FIG. 45.—THE CROWN OR MUMMY PEA.

viticella.—*Aramel.* *Myoporum serratum* var. *tuberculatum*.—*A. T. B.* *Lilium croceum*.—*F. O.* 1, *Limnanthes Douglasii*; 2, *Campanula species*.—*Veritas.* 1, *Saccolabium miniatum*; 2, *Aerides odoratum*; 3, *Tainia barbata*; 4, *Eria convallarioides*; 5, *Acampe multiflora*; 6, *Selaginella africana*.—*F. T.* *Clematis Jackmannii*. The abnormal development is due to a fusion of growth, the leaf having been carried up and partly formed into a floral segment.—*Spondian.* 1, *Reseda fruticulosa*; 2, the Crown or Mummy Pea; 3, *Allium proliferum* (Tree Onion).—*G. D.* 1, *Hibiscus schizopetalus*; 2, *Combretum purpureum*.

RICHARDIAS: *Aroid.* If cultivated in the usual manner *Richardia* (*Calla*) *Pentlandii* and *R. Elliottiana* have probably already flowered and should now be ripening their growth. When the leaves have died off the stocks may be stored away for the winter in an atmospheric temperature of 55° to 60°. In the spring shake out the roots and repot them; after this has been done place them in a heat ranging from 60° to 65° and treat the plants similar to *Caladiums* until

The plant is of robust growth, about 4 feet in height; the foliage is rather small, the stem gross and succulent, and it becomes much fasciated near to the top, from whence the pods are all produced in a great bunch or cluster to the number of 30 or 40, forming a sort of crown on the top of the plant (see fig. 45). The story of its having been discovered growing out of an Egyptian mummy is fabulous.

SHANKING OF GRAPES: *X. Y. Z.* It may be too late to save the Muscat Grapes this season. The conditions that have caused the berries to shank are described in your letter. In the first place, the borders are 18 inches too deep, and the soil is far too rich. The roots have been over watered according to your letter, and this would be sufficient in itself to cause shanking. The liquid manure you applied would induce gross growth, which is also a contributing cause of shanking. Outside borders may get too much rain unless they are protected. There can be no rule in watering, such as applying liquid at every three or four weeks. Unless the border

should be grown in a basket and suspended in a warm house. It is a marsh plant and should not be dried off at any period of the year. It requires a rooting medium of sphagnum-moss, peat, and silver sand.

VINE LEAVES WITH WARTS: *T. T.* The excrescences are due to an excessive growth in the tissue of the leaf, caused by too close an atmosphere, and excessive heat and moisture. There is no fungus present.

COMMUNICATIONS RECEIVED.—Consul-General for the Netherlands—*J. V.*—*H. E.*—*S. W.*, you have not sent your name and address, but in any case we cannot insert advertisements in the editorial columns. *De B. Crawshaw*—*Dr. Plowright*—*F. P.*—*Dr. M. C. C.*—*T. W. B.*—*G. W.*—*A. K.*—*L. G.*, Brussels—*A. Reader*—*T. S.*—*S. C.*—*H. L.*—*S. A.*—*Rev. D. R. W.*—*C. T. D.*—*J. D. G.*—*G. B.*—*F. Bros.*—*M. M.*, Geneva—*H. K.*—*F. W. M.*—*J. R. J.*—*A. C. S.*—*A. M. C. J. C.*—*Alwin Berger*—*H. T. W.* (next week)—*S. B.* & Son—*C. B.*—*G. H. I.*—*S. C.*—*T.* & Son—*E. H.* (next week)—*F. B.* (not uncommon)—*C. H.*—*A. W. K.*—*J. H.*—*J. Mc. C.*—*R. B.*—*Amos Perry*—*J. V.* & Sons, Ltd.—*Fresco*—*T. Ryan*—*E. C. W.*—*N. S.*—*T. H.*—*J. S.*—*W. W. P.*—*R. P.*—*G. A. H.*

PHOTOGRAPHS RECEIVED.—*W. S. L.*, Manila—*H. F. Mc. M.*, Ceylon—*Earl of Annesley*—*J. Allsop*—*J. G. W.*—*H. G. Alexander*.



THE

Gardeners' Chronicle

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THE ROSE SEASON.

NOTWITHSTANDING the depressing predictions of horticultural pessimists, the Rose season of this year has been wonderfully fine. At first our fairest garden treasures came through much atmospheric trouble; the buds which were primarily formed in June undoubtedly suffered greatly from the long absence of sunlight and the desolating influence of almost incessant rains; but Nature, as if repenting of her cruelty, ultimately smiled upon her flowers, with beneficent results. Never has the lovely Austrian Briar, *Rosa Harrisonii*, appeared in our gardens to greater advantage. This is one of the first Roses to open, and though it is, like most things of beauty, exceedingly transitory, it is of all Roses the sweetest while it lasts. As this precious acquisition is not arduous of culture, delighting in ordinary garden loam and a sheltered and mildly sunny situation, it should be much more widely cultivated than it is. I am surprised to find *Rosa Harrisonii* so seldom in the biggest gardens, when summer roses as a general rule are by no means ignored.

The picturesque Roses raised by Lord Penzance have also been supremely fascinating this season, such Hybrid Briars as *Jennie Deans*, *Lucy Ashton*, and *Meg Merrilies* being particularly fine.

Of the Hybrid Teas, whose name is legion, one of the first to flower profusely in my garden was *Papa Gontier*, a most prolific and attractive Rose, closely followed by *Warrior*, a splendid emanation, even finer than *Coralina*. Another new variety, a Hybrid Perpetual, which has achieved great distinction is *J. B. Clark*; it is most effective when not more than half blown. When this Irish introduction is fully expanded, it is an exceedingly large and open-hearted Rose. It has, I think, been over-estimated in comparison with *Hugh Dickson*, its lustrous predecessor. *Charles J. Grahame*, which keeps beautiful the memory of a very amiable, short-lived, earnest amateur rosarian, is also, though luminous in colour and gloriously fragrant, somewhat lacking in central petals; it is, nevertheless, by reason of its rich and rare complexion, a most attractive Rose. I am informed by a raiser of the greatest eminence that the "decorative" Roses, of which two of the finest representatives are *Irish Harmony* and *Irish Elegance*, are at present much more popular with cultivators than the larger and fuller Hybrid Perpetuals and Hybrid Teas. But, after all, the Roses that have been most effective, both here and elsewhere in this and former years, are such magnificent varieties as *Caroline Testout*, *Clara Watson*, *La France*, *Duke of Edinburgh*, *Horace Vernet*, *Viscountess Folkestone*, *Madame Alfred Carrière*, and *Bouquet d'Or*, which, in my estimation at least, are the Roses that chiefly glorify our gardens. The Duchess of Sutherland told me in a recent letter that the flowers which most impressed and astonished her, during a recent visit to Sicily, were the marvellous Hybrid Tea Roses. If we permit such Roses as these to be superseded by single or semi-double emblems of evanescence, we shall, I fear, go astray. Our annual exhibitions would suffer very materially from the absence of the full-fed floral giants to which I have referred. I venture to affirm that *Lady Gay*, however gracious in aspect and effusive of her gifts and manifold graces, would hardly make amends for the absence of *La France*.

Many of our largest and most effective Hybrid Teas also make magnificent climbers; *Margaret Dickson*, for example, has in my garden this season reached the height of 20 feet, flowering with fine artistic effect at that proud elevation, after arduous aspiration through a lofty Hawthorn hedge. This, I believe, eclipses its achievements in Australia and California, where the climate is almost ideal, and where it is assiduously and extensively grown. I should be greatly disposed to regard *Margaret Dickson* as the grandest Rose of its kind in cultivation, were it not for the superior size, form, and satin-like colour of that queen of all white Roses, *Frau Karl Druschki*, which I often think would be almost perfect had it only been endowed, in addition to its many incomparable attributes, with the exquisite fragrance of *Souvenir de S. A. Prince*.

One of the most grandly effective of all Roses this season has been *Madame Alfred*

Carrière, a Hybrid Noisette climber of great beauty, of most refined perfume, and wondrous floriferousness. Equally profuse in its flowering, and strangely contrasted in its colouring, has been *Bouquet d'Or*, the loveliest derivative from the venerable *Gloire de Dijon*.

Tea Roses, I fear, have not been seen at their best this season, for they have not yet recovered from long-continued adverse atmospheric experiences, but I am hopefully anticipating a successful later bloom. The Hybrid Perpetuals have, on the contrary, been almost as impressive as in former years, such crimson varieties as *Duke of Edinburgh*, *Horace Vernet*, *Cheshunt Scarlet*, and *Lady Helen Stewart* having, by their brilliant floral achievements, sustained their reputation. *David R. Williamson*.

LILIES WHICH FLOWER IN JULY.

WITH the practice that now prevails of retarding Lilies by keeping the bulbs in a cold-air chamber, flowering examples of most species may be had nearly, if not quite, throughout the year. To ensure this, glass accommodation and a certain amount of fire heat are necessary, but even when planted in the open ground the flowering period of the Lily extends from May to September.

The first to open is *Lilium pyrenaicum*, often called the *Yellow Martagon*, and when autumn frosts make their appearance the season ends with forms of *L. speciosum* and a few belated flowers of *L. auratum* and *L. tigrinum Fortunei*. The "Lily" month, however, is, I think, July, which was the month chosen for the great Lily conference held at Chiswick a few years ago, when such a representative collection of these noble flowers was brought together.

Many of the June-flowering Lilies extend into the following month, hence an entire list of those that bloom in July would amount to little more than a catalogue of most of the species in cultivation. Therefore, I propose to limit my remarks to a few of the very best Lilies, that are as a rule in the height of their beauty during the month named, and at the same time are not very exacting in their cultural requirements.

Of late years Lilies of this class have been planted on a broader and more extensive scale than was at one time usual. They are now frequently grouped among low or comparatively low growing shrubs, a most satisfactory method, as the tender shoots are in early spring protected from cold winds, while later the partial shade from sunshine thus afforded them is very beneficial. Added to this, the foliage of the shrubs serves admirably as a setting or background to the flowers.

In selecting shrubs for this purpose those of too dense a growth should be avoided, while those species of *Lilium* that require a loamy soil must not be associated with *Rhododendrons*, unless the *Rhododendrons* themselves are cultivated in fibrous loam.

Of the July-flowering Lilies which, effectually grouped, form such a striking feature in flower gardens or pleasure grounds, perhaps that which is most universally admired is the *Madonna Lily* (*Lilium candidum*). A native of the south of Europe, this species has been grown here for over three centuries, and is often seen at its best in cottage gardens. A fungus disease has given great trouble during late years, so that in many gardens where this species formerly flourished it cannot be grown. Still, my impression is that within the last year or two there has been a decided improvement in this respect. The *Madonna Lily* needs a well-drained loamy soil, and must, therefore, not be associated with *Rhododendrons* or other peat-loving

shrubs. The bulbs should not be buried very deeply, and if they have to be transplanted, the work should be done as soon as possible after the stems die down, because growth so quickly recommences.

Lilium Brownii, which, like *L. candidum*, is another of the Eulirion or tube-flowered group, flowers as a rule in the early part of the month. The typical form, as grown in Holland, reaches a height of about 3 feet, and bears long, trumpet-shaped flowers, which are heavily suffused with brown on the exterior, while the inside is of an ivory-white tint. Some forms of the Lily introduced from China within the last decade or so are altogether more vigorous than the type, and capable of producing a greater number of blossoms. Such are *L. Brownii leucanthum* and *L. Brownii chloraster*. The striking effect presented by the Chinese form of *L. Brownii* is well shown in the *Gardeners' Chronicle* for July 27 last, p. 67.

L. croceum is one of the upright or cup-flowered Lilies, which blooms as a rule in the first half of July, and is therefore largely in evidence in the Orange celebrations that take place in the northern part of Ireland. It is a remarkably handsome Lily, and one of the least exacting members of the genus. Like the Madonna Lily, it needs a loamy, rather than a peaty soil. The Orange Lily reaches a height of 3 feet to 5 feet, and bears a considerable number of flowers of a warm, reddish-orange tint. It is nearly related to the somewhat earlier flowering *Lilium dauricum*, but the individual blooms of *L. croceum* retain their brightness much longer than those of *L. dauricum*.

L. Hansonii is one of the Japanese members of the Martagon group, and differs from most species of that section in flowering well the first season after transplanting, for the majority of the Martagons resent being disturbed at the roots, and take two or three years to become re-established. This Lily thrives in a mixture of loam, peat, and sand, in which it will become quite established, and flower year after year. It is therefore suitable for cultivation in Rhododendron beds. The plants bloom generally early in July.

L. Martagon (Turk's Cap Lily) is closely related to the preceding species, but it is benefited by a greater proportion of loam in the soil. The colour, a kind of dull purplish pink, is not at all attractive, but the individual blooms are so symmetrical, and the contour of the whole spike so graceful that it is a general favourite. Two varieties—*album* (white) and *dalmaticum* (deep shining purple)—are among the most beautiful of all Lilies. The spikes of *L. Martagon* appear to be ideal subjects for use in a cut state to furnish large vases and for similar purposes, but in a confined space their strong perfume is disagreeable. Out of doors, however, *L. Martagon* is a delightful Lily.

L. longiflorum is represented in gardens by several forms, and it must be regarded as the most popular member of the genus. We draw our supplies from Japan, Bermuda, South Africa, the Canary Isles, and Holland. By far the greatest number comes from Japan, and the bulbs from that country are decidedly the best for planting out of doors. Being of lesser stature than many other Lilies, this species needs to be mixed with dwarf-growing shrubs, especially suitable for the purpose being many of the hardy Heaths.

L. pardalinum (the Panther Lily) is a native of California, and remarkable for its curious, creeping rhizome-like bulbs, a characteristic shared by a few other species from the North American continent. It is essentially peat-loving, and needs a fair amount of moisture, hence it is seen at its very best when associated with Rhododendrons and similar plants. The Panther Lily will reach a height of 6 feet to 9 feet, and bear 20 to 30 flowers on a stem. They are prettily reflexed, and disposed in an exceedingly graceful manner. In colour the flowers are bright orange, more or less spotted with red,

while the tips of the petals are scarlet. In some forms this colouring extends at least over one-half of each petal. One of the best varieties, and a vigorous grower is *L. p. californicum*.

L. testaceum is also known as *L. excelsum*, and cannot be confounded with any other Lily in cultivation, as the nankeen colour of the flowers is so distinct from all other Lilies. It will reach a height of 6 feet or more, and on this account the drooping flowers are seen to particular advantage. This species may be grown in a similar mixture of soil as is recommended for *L.*

ORCHID NOTES AND GLEANINGS.

DENDROBIUM REGIUM.

This species was shown for the first time in this country, at the meeting of the Royal Horticultural Society on the 6th inst., when plants in flower were displayed by Sir Trevor Lawrence and Messrs. Charlesworth & Co. The species is a native of Lower Hindustan, and was described by Lt.-Col. Prain, in 1902, in the *Journal of the Asiatic Society*



FIG. 46.—DENDROBIUM REGIUM; A RECENTLY INTRODUCED SPECIES FROM INDIA: SEPALS AND PETALS ROSE-COLOURED, LIP WHITE WITH A YELLOW DISC.

Hansonii, or in loam under such conditions as are favourable to *L. candidum*. However limited may be a selection of Lilies for outdoor culture, *L. testaceum* must on no account be omitted.

My article being already long, I will conclude with the remark that while flowers of such lilies as *Lilium auratum*, *L. chalcidonicum*, *L. giganteum*, *L. Henryi*, *L. superbum*, and *L. tigrinum*, may open in July, these species are more correctly described as August-flowering species. W.

(lxxi., p. 80); a plant flowered at Kew in 1904. The flowers have a general resemblance to those of *D. nobile*, but they are without the usual dark blotch that is present on the lip in the older species.

The largest flower measured 4 inches across its widest part, and the petals are much broader than those of *D. nobile*. The segments are a clear shade of rose; the base of the lip is white, with a yellow disc, while the pointed front portion is of the same colour as the petals and sepals, but of a deeper shade.

THE ORCHIDS OF THE NORTH-WESTERN HIMALAYA.

THIS valuable continuation of the *Annals of the Royal Botanic Garden, Calcutta*, forming Part II. of the 9th volume, is by Dr. J. F. Duthie, B.A., F.L.S., late Director, Botanical Department, Northern India. The plan of the work is best described by the author in his preface as follows:—

"The attempt here made to give an account of the Orchids of the Western Himalaya may be regarded as a supplement to the splendid work

Orchids of the region, together with a table showing the distribution of the different genera in other parts of the world. It appears that the number of species of Orchids at present known in the region dealt with is 173, 59 being epiphytes and 114 terrestrial species. They are included in 45 genera. Twenty-four species, some of which are described by the author as new, are not known to occur outside the area of the Western Himalaya, and the following 10 species extend to Britain: *Listera ovata*, *Corallorhiza innata*, *Goodyera repens*, *Spiranthes autumnalis*,

Mackinnonii, Duthie, and the singular leafless, parasitic *C. macrorhizon*; *Cypripedium* 1, *Dendrobium* 4, *Eria* 1, *Eulophia* 6, *Gastrodia* 1, *Goodyera* 2, *Habenaria* 18, *Hemipilia* 1, *Herminium* 4, *Liparis* 5, *Microstylis* 1, *Oberonia* 1, *Oreorchis* 2, *Pogonia* 3, and *Vanda* 1.

The work is printed by the Bengal Secretariat Press, Calcutta, and may be obtained in this country either with the plates uncoloured or half-coloured.

ONCIDIUM TRIQUETRUM.

AN inflorescence and leaf of this pretty species has been sent by Mr. J. Spiller, gardener to Dr. G. B. Longstaff, Highlands, Putney Heath, taken from a specimen which bloomed among plants collected by Dr. Longstaff in Jamaica last winter. It is a dwarf species, with equitant, fleshy, acutely three-angled leaves and a spray of flowers, each of which is 1 inch across. All the segments are red with a white margin, which is broadest in the petals, and the labellum is streaked with red. *O. triquetrum*, and others of its section, should be grown in small baskets or Orchid pans and suspended near the glass of the roof in an intermediate house, as the plant soon fails if placed on the stage with the larger and stronger-growing species.

ONCIDIUM LURIDUM GUTTATUM.

THE superior beauty of the Jamaica form of this variable species, and which goes far towards entitling it to rank as a distinct type, if not a different species, is well shown in a few sprays sent by Mr. J. Spiller. The species, which has large fleshy leaves, is widely distributed in tropical America, the varieties generally having a straggling inflorescence and the flowers a large proportion of dull brown colour. The Jamaica form has light green leaves spotted with dark green, a much-branched inflorescence, and well-formed yellow flowers spotted with red-brown, the labellum being lightest in colour. The column is white, and the crest yellow and rose-coloured. *J. O'B.*

ITEA ILICIFOLIA.

ON page 375 of the *Gardeners' Chronicle* for November 28, 1903 (vol. xxxiv.), appeared a figure of a spray of this plant, which flowered at Kew in 1903 for the first time. The text described the raceme of flowers as being about 4 inches in length. The same plant was recently in flower in the Himalayan House at Kew, and this year some of the racemes were quite 1 foot in length, drooping from the end of the branches—not rigid, as shown in the figure quoted.

Judging by the dried specimens collected by E. H. Wilson, for Messrs. Veitch, in the neighbourhood of Ichang, Central China, a foot seems to be the normal length of the flower raceme in the wild state.

Itea ilicifolia is an evergreen shrub, native to Central China, and was first collected by Dr. A. Henry, from whose material it was figured and described in Hooker's *Icones Plantarum*, t. 1538. Found in glens or on exposed cliffs in its native country, it is said to attain a height of from 2 to 18 feet, according to the situation.

The leaves, from $2\frac{1}{2}$ to 3 inches long by $1\frac{1}{4}$ to 2 inches broad, are broadly elliptic in outline, with sinuate spinescent margins, and so closely resemble those of a Holly that, out of flower, one might easily mistake the plant for a species of *Ilex*. The numerous small, greenish-white flowers are almost sessile along the length of the raceme, and suggestive of those of the better-known *Itea virginica*, a deciduous species from North America, hitherto the only representative of the genus in cultivation.

Three other species, namely, *I. chinensis*, *I. parviflora*, and *I. yunnanensis*, are recorded from China, but these do not appear to have been introduced into cultivation. *Itea ilicifolia* seems to have been first cultivated in this country by Lord Kesteven, for on p. 504 of the



(Photograph by E. J. Wallis.

FIG. 47.—ITEA ILICIFOLIA FLOWERING RECENTLY AT KEW: FLOWERS WHITE.

by Sir George King and Mr. R. Pantling on the *Orchids of the Sikkim Himalaya*, which was published in 1898 as Vol. VIII. of the *Annals of the Royal Botanic Garden, Calcutta*. With Sir Joseph Hooker's monograph of the *Orchids of British India* as a basis, and Sir George King's as a model for a local Orchid-flora, the preparation of the present contribution has been very greatly facilitated."

The introduction gives particulars of the Western Himalaya and the distribution of the

Epipogon aphyllum, *Epipactis latifolia*, *Cephalanthera ensifolia*, *Orchis latifolia*, *Herminium Monorchis*, and *Habenaria viridis*.

The desire being to avoid again illustrating the showier species already figured in the *Orchids of the Sikkim Himalaya*, but few of the species so carefully illustrated in the 58 plates of the present work are of that character, and the subjects are principally terrestrial species. The genera illustrated are: *Aphyllorchis* 1, *Calanthe* 3, *Cirrhopetalum* 1, *Cymbidium* 2 (*C.*

volume of the *Gardeners' Chronicle* already quoted, his lordship wrote that he raised plants from seeds sent by Dr. Henry from China, and had grown them in the open in Lincolnshire, in a position protected on the north and east by other shrubs, for at least 14 years prior to the date of its recorded flowering at Kew.

In the south-west of England it would probably prove hardy, and if afforded the protection of a wall might succeed out-of-doors in some gardens in less favoured localities. *H. Spooner.*

HARDY AQUATIC AND WATERSIDE PLANTS.

A LAKE or pond, and even a simple water-course, can be made objects of much beauty when planted with a selection of water plants.

A small portion around the margin should be set apart for planting bog-loving plants: these should not be kept trim, but should be allowed to grow nearly wild, with only such pruning and clipping as are necessary to keep one plant from smothering its neighbour. Among the many beautiful plants that will grow in water is the floating *Aponogeton distachyon*. Its flowers are pure white, and waxy in appearance, with a pleasant scent resembling that of the common Hawthorn. Although a native of the Cape of Good Hope, it thrives in this country, and, when once thoroughly established in moderately deep water, reproduces itself freely from seeds. If a supply of plants be quickly needed, the seeds should be sown in a tank in a warm greenhouse, where, in a very short time, an abundance of plants may be raised, and afterwards hardened and planted out.

The large, flat, floating leaves of *Nymphaea alba* present a stately appearance on the water. In planting new crowns some good fibrous turves should be secured to its roots to cause the plant to sink in the water. I find this a much better plan than the use of sunk baskets.

Richardia africana is usually grown as a pot plant, but it is equally serviceable for planting in water, where it will survive as much as 18° of frost. Plants in these gardens are flourishing well in water, and prove the most handsome of all aquatics, as their foliage and inflorescence stand up well, and appear charming viewed from a distance. Another pleasing aquatic plant is *Acorus Calamus*, the Sweet Flag. Both the stems and the leaves give off a very beautiful perfume when they are rubbed. Another native plant, *Butomus umbellatus*, the flowering Rush, forms a very handsome subject for the water-garden. It has linear leaves and large umbels of rosy-pink flowers produced on peduncles from 3 to 4 feet high. The large, arrow-shaped leaves of *Sagittaria sagittifolia* form a fine clump that is crowned in summer with white flowers. *Menyanthes trifoliata* has creeping stems, and in the early part of the season produces large racemose heads of pretty, white flowers, which are exceedingly handsome when closely inspected.

Caltha palustris and its improved forms produce quantities of bright yellow flowers early in the year. *C. p. polypetala* is one of these improved forms. It has much larger leaves and flowers than the type plant.

Calla palustris is a small miniature Arum, with white flowers that are borne not more than 6 to 9 inches above the water. Rats are very fond of this plant.

Other suitable plants for water planting are:—*Orontium aquaticum*: this produces bright-golden flowers in early summer. *Ranunculus lingua*, a large, showy, yellow-flowered species, rising about 18 inches above the water. *Typha angustifolia*, the long-leaved Cat's Tail. *Peltandra virginica*, the Water Arum: this plant has large, arrow-shaped foliage and a white spadix; it is very handsome when seen in bold clumps. *Valisneria spiralis*, with long leaves and small, white flowers; *Rumex hydrolapathum*, the Giant

Waterdock. *Scirpus lacustris*, and *Zizania aquatica*, the Rice plant.

Amongst the best plants that will succeed on the banks of lakes and streams are several species of *Carex*, including *C. pendula*, a very graceful and ornamental plant; *C. Greyii*, an upright-growing species, with yellowish-green apical flowers; and *C. japonica*. These sedges should all be plentifully planted along the banks of streams and ponds, where they form very graceful and effective objects.

Lythrum roseum superbum has bright, rosy-red flowers, and is a very showy subject. *Spiraea palmata* is a plant which grows rapidly and soon makes a big clump, and flowers profusely. It reaches a height of from 3 to 4 feet, and its season of flowering is July. *S. gigantea* is a large species that produces big, white plumes of flowers, the inflorescences sometimes measuring 8 or 9 feet in height. It flowers in July and August. *S. Davidii* is one of the newer *Spiræas*. Plants at Leonardslee have reached a height of from 3 to 4 feet this season. They flower in August. *Hemerocallis* in variety flourish well in damp situations, and their flowers make a very fine blaze of colour. Both *Mimulus cardinalis* and *M. lutea* are charming subjects for the waterside. *Funkias*, especially *F. Sieboldi*, make large clumps on the banks of ponds or in any other moist place. The large leaves of *Gunnera manicata* form a distinct feature. The plants require protecting with some dry material during the winter and spring months. The protective material should be of a very light nature, so that it can be lifted up by the leaves as they develop. All flowering shoots should be removed as they appear. The leaves reach a much larger size when the plants are uninjured by frost.

Gunnera scabra, often known as *G. manicata*, is not of such robust growth as the true *G. manicata*. Other species of *Gunnera* are *G. magellanica*, a plant with small leaves, and *G. monoica*, a still smaller plant.

Among showy flowering plants are the varieties of *Iris Kämpferi*: *Pinguicula grandiflora* has pretty dark blue coloured flowers, which appear in spring time; *Petasites gigantea* has leaves from 2 to 3 feet wide, and the same measurement in height. *Saxifraga peltata* flowers early in the season, after which the handsome foliage develops. This plant should be given some good rich material at its roots. *Polygonum sachalinense* grows from 8 to 10 feet in height in favoured situations and is a very handsome subject. *Rodgersia podophylla* is a fine foliage and flowering plant, with large peltate leaves, which assume a bronze colour. *Primula japonica* succeeds well on the banks, and also partly in the water. In a season or two this plant reproduces itself in immense numbers. *Primula rosea* succeeds when grown on large stones in the water. *Primula sikkimensis*, a yellow species, will also grow in a similar position in a sheltered spot. *Sarracenia purpurea* is always an interesting plant. It will flower freely in a position that is fully exposed to the sun. *Darlingtonia californica* needs the same treatment as *Sarracenia*; and both plants should be afforded a dressing of sphagnum-moss over their roots. *Crinum capense* flowers and flourishes splendidly in a bog.

Among other plants may be mentioned Ferns, including *Lastrea Thelypteris* (Marsh Fern); *Onoclea sensibilis*; *Struthiopteris japonica*; *S. pennsylvanica*, a very pretty plant. All the species of *Osmunda* are particularly fine subjects for the bank in low places near to the water. Other good subjects are *Parnassia palustris* and its varieties. *Polyanthus* in variety, *Myosotis*, *Lilium pardalinum*, *L. superbum*, *Lysimachias*, *Glycerium argenteum* (Pampas Grass), *Bambusa Metake*, *Phyllostachys viridi glaucescens*, and *Rhododendrons*.

Many of these plants require high feeding to produce the best results, and this is best done by top-dressing. Lilies, Irises, *Spiræas*, and

many other plants should be afforded manure several times during their growing season.

Rustic bridges which span the water should be covered with climbing plants, such as *Wistarias*, *Jasmines*, *Loniceras*, *Rambling Roses*, *Nasturtium speciosum*, *Clematis montana*, and *Asparagus acutifolius*. The plants are best when they are allowed to grow loosely, and are only secured sufficiently to keep them in their proper position. *W. A. Cook, Leonardslee Gardens, Horsham, Sussex.*

TREES AND SHRUBS.

POPULUS CANESCENS.

THIS variety, a cross between the Silver Poplar (*Populus alba*) and the Aspen (*P. tremula*), is of interest to the botanist for the various transition forms observable in the leaves. As a forest tree, *P. canescens* is one of the most valuable owing to its resistance to the wind, it being in this respect superior to *P. alba*, and for the landscape gardener its vigorous and open habit of growth in the crown is not without interest. The foliage is of a greyish-green tint, and of larger size than that of either parent, and bears a certain resemblance to *P. nigra*, as likewise does the form and build of the crown in old examples. The colour of the bark is greyish-brown, somewhat resembling *P. alba*. *F. M.*

BUDDLEIA COLVILEI.

It may be interesting to record that a plant of *Buddleia Colvillei* has flowered for two years in succession in Lady Fowler's garden at Inverbroom, in the north-west of Ross-shire. It has, however, not formed inflorescences on the axillary shoots, as mentioned by Mr. Winter on p. 26. The specimen is trained against a wall that faces west, where it has withstood 24° of frost, but I am of the same opinion as Mr. W. E. Gumbleton (p. 54) that the species is not hardy, and that a few more degrees of frost would cut it down very badly, or even kill it.

STYRAX JAPONICA.

I WAS much interested in the article by Mr. Cook on "Choice Shrubs at Leonardslee Gardens," and more especially with his remarks on *Styrax japonica*, *Stuartia pseudo-camellia*, and *Cæsalpinia japonica*. Mr. Cook states the size of the *Styrax*, but does not afford the information as to the age of the tree when it first flowered. A young specimen was planted in these gardens last spring, with others of *Buddleia alba* flora, *Crinodendron Hookeri*, *Carpenteria californica*, *Photinia arbutifolia*, *Olearia stellulata* or *Gunnii*, and *Ceanothus Gloire de Versailles*, and all, save the *Styrax*, have either flowered or are about to do so, and in no case is a plant more than 2 feet high, *Olearia stellulata* being only 1 foot high. *Davidia involucrata*, *Eucryphia pinnatifolia*, and *Abutilon vitifolium*, also planted at the same time, show no signs of flowering. *Harry Low, Braemar Gardens, Garve, Ross-shire.*

VEGETABLES.

CABBAGE LETTUCE TREMONT.

FOR late sowing this variety is largely grown in Switzerland, but seldom in any of the neighbouring countries. It stands the weather uncommonly well, and, in spite of this fact, it has large, tender heads, much liked as a market variety. The leaves are red-edged and spotted. For winter supply the seed is sown at the end of the month of July, and, at the latest, at the beginning of August. With some kind of protection by means of boards at the sides of the bed, and a covering of mats, or brushwood, or straw laid on these, heads can be cut as late as Christmas-tide, the plant enduring a certain degree of frost uninjured. *F.*

THE FERNERY.

A NEW LADY FERN.

(*ATHYRIUM FILIX FEMINA KALOTHRIX CRISTATUM*.)

THE "Kalothrix" or "beautiful hair" variety of the Lady Fern is unique, since not merely are the normal divisions of the frond reduced symmetrically to slender threads, but these are peculiarly transparent and have a shining, silky surface such as no other variety possesses. Its origin is somewhat mysterious, since it originated with two raisers about 1870, assumably from the spores of a plumose Lady Fern in the Oxford botanic gardens at that date. There exists, however, a herbarium specimen of a frond of a precisely similar form found wild on

in which the fronds and their divisions consist of longer but far fewer hairlike sub-divisions set widely apart.

Until recently, and despite the fact that the Fern has been freely raised from spores ever since it was discovered, no tasselled form has been noticed. Notwithstanding, this was attempted by myself some years ago by crossing it with finely-crested forms, the only result was to get slenderer-crested Ferns of the coarse-surfaced type. Three years ago I sowed spores of my plumose strain of *A. f. f.* "superbum" in a small thumb pot. The sowing went wrong, the little pot developed a few spores only, and, room being needed, it was lifted out to be thrown away when a minute little clump of clustered mossy-looking frondlets attracted attention. I discovered that no fewer than seven young

is perhaps the most noteworthy. In any case, two points are very remarkable, the one that so beautiful a form should be obtained by such an accident, and the other that so many plants should originate from a single prothallus. *Chas. T. Drury, V.M.H., F.L.S.*

NURSERY NOTES.

ANNUALS AT READING.

I RECENTLY inspected a very comprehensive trial of annuals, including an exhaustive one of Sweet Peas, in the nursery of Messrs. Sutton & Sons, Reading. The actual number of varieties on trial was 461, contained in 1,016 rows, having a total length of 2½ miles. The arrange-



FIG. 48.—A GROUP OF HARDY NYMPHÆAS AND OTHER WATER-PLANTS EXHIBITED BY LEOPOLD DE ROTHSCHILD, ESQ., AT THE MEETING OF THE R.H.S. ON AUGUST 6 LAST. (See page 115 in the last issue.)

[Photograph by E. J. Wallis

the Mourne Mountains in Ireland many years previously, but there are no records of its subsequent cultivation. That the form now existent was derived independently from a merely plumose type is largely evidenced by the fact that not only does *Kalothrix* partially revert and produce the coarser parental divisions and even entire fronds of a coarser type among a far larger proportion of the true form, but if its spores be sown, the crop is almost invariably of two kinds, viz., true *Kalothrix* and true plumosums, the latter strongly resembling *A. f. f.* *plumosum* Horsfall, but known as *A. f. f.* *p. Stansfieldii*. The qualification almost is only justified by the fact that two sub-varieties have been raised, viz., *A. f. f. k. foliosum*, with wider but still silky divisions, and *A. f. f. k. linearis*,

Ferns had sprung from one prothallus. These were severed, and I thus obtained seven tiny plants, each with its own rootlet. As they developed, the *Kalothrix* silkiness appeared. I have now six beautifully-tasselled plants of the *Kalothrix* type. It is, of course, a matter of doubt whether these arose from the spores of *superbum* actually sown or from a stray spore of *Kalothrix* which, by crossing, acquired the *superbum* faculty of cresting. This latter theory seems the more probable, since in one of the plants part of one of the pinnae shows distinctly that tendency to partial reversion which is peculiar to *Kalothrix*; on the contrary, if they have resulted from crossing it is extraordinary that all the seven archegonia should have been fertilised by similar antherozoids. This last fact

ment of the varieties in groups according to colour, is one that finds favour with the visitor, and by this means one or a dozen varieties of a similar colour can be compared at a glance. Superior and inferior stocks could be singled out with the same ease. In the case of all great seed firms, a trial for comparison becomes imperative each year. This is especially necessary in the case of Sweet Peas. In the large collection of Sweet Peas at Reading, some varieties are much superior to others, and in white-flowered sorts Messrs. Sutton's Giant-flowered White is conspicuous. Nora Unwin, which may be regarded as the Countess Spencer form of Dorothy Eckford, is also a very fine white variety. In the pink-flowered sorts, Queen of Pinks was noticed

by reason of the pure salmon-pink tint of its petals, the size of the blossoms, and their refined character. Miss Willmott, Bolton's Pink, and Orange Prince (a conspicuous shade) are other excellent varieties. Among the flowers with a more pronounced red shade, King Edward VII., Queen Alexandra, John Ingman, Her Majesty (one of the largest flowered varieties, with bright rose standards and pale rose wings), Salopian, Evelyn Byatt, and Helen Lewis were all good. In pink and red-flaked sorts, Aurora, a salmon-pink on white ground, is most effective; while in the delicate rose and pale pink shades, Gladys Unwin, Countess Spencer, Dainty, and Mrs. Alfred Watkins are leading sorts.

Of cream and yellow varieties Hon. Mrs. E. Kenyon, Queen Victoria, Jeannie Gordon (a dainty flower in cream and rose), and Primrose Queen are all good. Mrs. H. Kendall Barnes and Dora Breadmore are of the cream ground class, with a tinge of pink or other shade. Among the flowers of a blue shade I noted Flora Norton, Mrs. G. Higginson, Jun., Frank Dolby (frilled, pale mauve), Mrs. Walter Wright (mauve, fine of form), and other well-known sorts, including Lady Grisel Hamilton, Countess of Radnor, &c. Sutton's Butterfly, a pure white flower, edged with lavender-blue, was also noted as a beautiful and distinct variety. Brilliant Blue, also known as Lord Nelson, is a fine deep blue, excellent in form and colour. Quite one of the best of Messrs. Sutton's novelties for the year is named "Our Queen." It is of true Spencer form, and is a suffusion of pale pink on a cream ground. An interesting feature in the Sweet Pea trials was a portion devoted to colour mixtures. That is to say, a proportionate—not an indiscriminate—mixture, in which varieties of certain colours only were blended. Some of the more conspicuous of these mixtures were composed of the following colours:—Cream and maroon; cream and pale blue; rose and pale blue; red, white, and blue; pink, yellow, and salmon; and salmon-pink and scarlet.

Apart from the trial of Sweet Peas were to be seen others of Godetias, Clarkias, Nasturtiums, Stocks of many shades and types, brilliant Eschscholtzias, Linums, and annual Chrysanthemums. Of the last-named plants the improved forms of *C. segetum grandiflorum*, known as Morning Star and Evening Star, are acquisitions. *Saponaria vaccaria* is a good pink-flowered plant, and valuable for bedding or for supplying cut flowers. The large-flowered forms of the Sweet Sultan always attract attention, the mauve and white colours of the flowers being very attractive. *Schizanthus*, sown in the open air in April, was an unqualified success. The "compacta" strain of *Nemesia* now embraces almost every shade of colour, with blossoms of the largest size. In Sweet Williams, the brilliant pink and scarlet-flowered varieties appear to be well-nigh perfection in their respective shades. Not least among the choice plants is a Foxglove named Primrose Perfection, with flowers a soft chrome yellow, and with faint spottings on the throat. E. J.

COLONIAL NOTES.

HORTICULTURE IN WESTERN CANADA.

THE largest and most up-to-date greenhouses in Canada, west of Toronto, are situated in the city of Edmonton, in the north-west. This fact is something to be proud of, for the city 10 years ago was but a trading post, and even the western Gotham-Winnipeg has not such large or well-equipped greenhouses as those belonging to the firm of Ramsay.

There are six plant-houses in all, built on the ridge and furrow principle, and each contains two beds, 150 feet long by 5 feet wide. By next winter the ground space will be exactly

doubled, for there will then be a total of 24 beds of this size.

The system of ventilation, both in summer and in winter, is as perfect as possible. The water for the plants is carried in pipes along each house; 1½ miles of 2-inch steel pipes form part of an efficient steam-heating apparatus. Last winter, the coldest on record, 400 tons of coal were required to keep the houses at a proper temperature. In summer time as evening approaches, and the heat of a June sun moderates, these greenhouses form a pleasant place to saunter through. At the entrance, a bed of tall Palms and Ferns are massed in their cool greenery, and the eye afterwards encounters beds of Roses. Our season of Roses is when the prairies of the west are all a-bloom in July with the delicious wild Rose. One long bed is filled with the pure white and the pink varieties Bride and Bridesmaid, and for these varieties there is a constant demand all the year round. One sturdy-stemmed, thorny Rose, with blooms of a deep carmine shade, is appropriately called General McArthur. Still newer is Richmond, a southern-raised flower with full, loose, red petals that are most attractive when in the bud stage. American Beauty is a long-stemmed, smooth-foliaged, and luxuriant-growing Rose, and near at hand is planted the old-fashioned Perle du Jardin, a softly tinted, yellow Tea variety.

There is not seen in the whole assemblage of blooms one of a more subtle charm than Canadian Queen. This is pure white or pearl at the centre, but its unfolding petals are tinged with a deep pink shade. It has something of the character of the wild prairie Rose in its free arrangement of petals. Second only in popularity to the Roses are the flowers in the next house, the Carnations. The clear shell-pink petals of Enchantress are most beautiful; in the next bed are white varieties, including Glacier, Queen Louise, and Boston Market. Marquis, growing close to these, has something of the charm of colouring seen in Canadian Queen; in addition, it has a delightful fragrance. Others grown are Estelle (scarlet) and President Roosevelt (rich, deep red). This flower, used with *Lilium Harrisii*, is excellent for the making of bouquets. Sweet Peas also do well here, and plants from a sowing made last September have been blooming profusely since January. Little less important than the cultivation of flowers is the provision of greenery, essential for the artistic arrangement of bouquets, and a quarter is devoted to the culture of Smilax and Ferns. Tall Palms of many varieties, Rubber plants, and a fine array of other foliage plants find a place here. One entire house has this year been devoted to Chrysanthemums, and over 3,000 stocky young plants are seen. This flower is a favourite at Edmonton, as elsewhere, and the supply last year was not equal to the demand, but this year increased space has been given to the cultivation of Chrysanthemums. At several spots in these plant-houses, the eye meets a group of old-fashioned scarlet Pelargoniums. These are in many varieties, with both double and semi-double flowers of many colours. Edmonton has not yet reached the stage where universal attention is paid to the care of its lawn and gardens, and this year the late spring militated greatly against the beautifying of gardens. However, the greenhouses supplied many plants for beds and baskets, the greatest demand being for Pansies, Asters, Stocks, Petunias, Verbenas, Daisies, Pelargoniums, and Phloxes. There was no demand for Cannas, and but little for Coleus. Ageratum is a favourite border plant in summer. Among other plants grown in this district are Nasturtiums, with flowers of orange, tawny and scarlet colours, and the old-fashioned Musk. Next winter greater attention will be given to the raising of Tomatoes, Lettuce, and other vegetables, for the supply of last winter was not suffi-

cient to meet the demand. Fresh propagating beds are being added, another "Florence" boiler is being installed, and the heating capacity of the present plant will be doubled. Next winter the houses will cover an area of about 2 acres. C. F. Clark, 343, Tenth Street, Edmonton, Alberta, July, 1907.

THE HARDY FLOWER BORDER.

CAMPANULA GRANDIS.

(SYN. C. LATIFOLIA.)

WITH the present desire for novelty, it not infrequently happens that the merits of old-fashioned plants are overlooked, and I think this is true of the above-named Campanula, which is one of the showiest border plants in flower at the present time. Usually it attains to a height of about 3 feet, but considerably more if liberally treated, and where the soil is rather moist and deep. It is erect-growing and self-supporting, and produces long, columnar spikes of closely-set, somewhat salver-shaped blossoms that are of an intensely deep violet-blue colour. It is probably one of the most accommodating of good border Bell-flowers, and is readily distinguished from the peach-leaved Bell-flowers by its dense ground-covering of lance-shaped leaves, the leading tufts of which form themselves into huge rosettes. The plant is of vigorous growth and easy of culture. Its density of growth demands a periodical transplanting, and the reducing of much of its shoots. This Campanula forms a splendid border plant for a chalky soil, but it will succeed on very light soils. I recently saw in the herbaceous border at the Horticultural College, Swanley, a group of plants several feet across. The flowers were beautiful even when seen at a great distance, and the display of blossoms will probably continue for some time to come.

CAMPANULA VAN HOUTTEI.

THIS variety is placed in the Kew *Hand-List* under the name of *C. latifolia*, but I think there is much evidence in support of its being a hybrid, with possibly *C. latifolia* as one of the parents. The leaf and more slender stem growth have nothing in common with the species named, much less has the stoloniferous habit of the plant, a characteristic which partakes more closely of the habit of *C. punctata*. If, in addition to these things, the time of flowering is considered, there is, I think, far greater evidence of varietal relationship to the latter than the former species. But, whatever its origin, the plant is a valuable addition to the garden, and the pale lavender-blue of the large pendent bells renders it a welcome subject in the early summer time. It will not admit of massing if its slender grace and beauty are to be seen to the best advantage. In soils of a light texture the stolons ramify rather freely, but less so in heavy soils. In the case of very heavy soil a free addition of leaf soil, spent mushroom-bed manure, or even cocoa-nut fibre about the roots at planting time will be of assistance in promoting an early growth. Established plants may be planted at any time, but ground plants are best planted in spring. E. H.

CAMPANULA ROTUNDIFOLIA VAR. ALASKANA.

I RECEIVED a plant last year under this name from Herr Max Leichtlin, but it has not proved distinct from some of the forms of *C. rotundifolia* already in cultivation. It is somewhat dwarfer than the variety of *C. rotundifolia* called pallida, but the large bells are of much the same shade of light blue. The many varieties of the common Harebell are worthy subjects for the hardy flower border, and amongst the best is *C. rotundifolia pallida*. S. A.

CAMPANULA ROTUNDIFOLIA VAR. ALPINA.

THIS plant is often sold as *Campanula alpina*, but it is entirely distinct from that species, and is much easier of cultivation than the true *C. alpina*. It is one of the prettiest of the dwarf-growing Harebells, and has long been in cultivation. The very dark flowers produced on stems about 9 inches in height contrast well with the white downy stems. Maund figured the plant under notice as *C. alpina*, but the error was corrected by the late Mr. J. C. Niven, of Hull.

ANEMONE ELONGATA.

THIS windflower, which I acquired last year for the first time, is now in bloom in my garden, but it is greatly inferior to many *Anemones* already in cultivation. It has a broad general resemblance to *Anemone sylvestris*, but there can be no real comparison between the latter beautiful species and the Himalayan one, for *A. elongata* is much the inferior of the two. The foliage is rather like that of *A. sylvestris*, but it is of more irregular outline, and larger and slightly lighter in colour. Only one of my plants has flowered, and this has developed a flower stem bearing, about a third up, where it forks, a few leaves. Thence the taller of the two stalks rises without any leaves to a total height of 20 inches from the soil. The other stalk has a tuft of leaves about half-way up, and is about 16 inches high. The flowers, which are erect, are $\frac{2}{3}$ -inch across, and are of a dull, greenish white. The anthers are bright green. There is nothing about the plant to commend it for planting in gardens. S. Arnott, Sunnymead, Dumfries.

SALVIA ARGENTEA.

THIS species is one of the most beautiful of the genus. The plant grows about 3 feet in height, is of a free branching habit, and produces numerous sprays of large pure white flowers in June and July. The foliage, however, is its most distinctive feature, for the leaves are broad and silvery and they show to advantage in the herbaceous border or in the Alpine garden. The species is very hardy, and can be grown in a light, well-drained soil without difficulty. W. G., Somerset.

NOTICES OF BOOKS.

BEES FOR PLEASURE AND PROFIT.*

A BOOK to be of real value to the beginner in any art must be written in simple, and, at the same time, plain language; further, it should be arranged in logical order, and its different subdivisions clearly set out so that it may form a handy book of reference. The work under notice fulfils these conditions, and can therefore with confidence be recommended to persons about to embark on bee-keeping as a hobby or for profit.

It is a fascinating book and one of interest from cover to cover. The writer, in his preface, claims that the work is free from unnecessary verbosity, and this statement is certainly a true one. The book has the stamp of practical experience on every page, and it should be especially welcome at a time when the question of "small holdings" is uppermost, for, with the development of "small holdings," fruit culture will receive more and more attention, and the work performed by bees in a fruit plantation is valuable.

The illustrations are very good, but one cannot but be sorry that the picture of a comb stored with honey and brood (fig. 4) was not reproduced from a photograph.

Fully ripened honey, that is honey from sealed cells, is the best for extraction, and is superior to that from the honey ripener, particulars of which

are given on p. 49. The additional chapter on "Bee-keeping in Hot Climates" will be useful to our Colonial kinsmen, and also to those persons about to emigrate.

This little treatise will also be of value to those who have made some advance in the art of bee-keeping, no less than to the beginner, and to these the pages on "Queen Raising" and "Queen Introduction" will prove of great interest. *Chloris*.

ECONOMIC ZOOLOGY.*

No better evidence can be adduced of the growing interest in Economic Zoology than in the support which has been given to it by the County Councils of Surrey and Kent. They have materially advanced this branch of natural science by furnishing the necessary means for the annual publication of such valuable reports as the one which has just been issued from the South-Eastern Agricultural College at Wye, Kent.

We find this report a worthy companion of those which have preceded it, and the author's name is a guarantee of the thoroughness both of the practical and scientific portions of the work. It affords at once a work easy enough for the professional, and if not quite full enough is precise enough to form an excellent text book on the subject.

We gather from a perusal of its pages that numerous experiments have been carried out with insecticides, "partly in conjunction with Mr. Spencer Pickering, who has kindly supplied the various washes that he has worked with." While efficiency is claimed for many of the "washes" no satisfactory results are recorded concerning the destruction of the eggs of insects peculiar to various fruit trees during the winter months. "But the large series of experiments being carried out in Worcestershire under the auspices of the County Council by Mr. Kenneth Farley, and similar ones carried out by many growers in Kent and Surrey, may yield some definite results. The greatest success so far has been obtained by the use of lime and salt . . . but the matter requires further work yet to find out what is best to add so as to increase its adhesive power."

We fear that it has long been a standing reproach to the Economic Entomologists of this county that they have not yet succeeded in discovering an effective remedy for the Currant bud-mite or "big bud." Twenty years ago carbolic acid was claimed as a remedy, but this proved more harmful to the plants than the destructive work of the mites. Since that time a number of equally useless methods have been claimed as a means of checking or destroying this pest; prominent among these were the "hot water cure" and fumigation with hydrocyanic acid gas. The numerous and almost exhaustive experiments conducted by Mr. Spencer Pickering¹ at the Duke of Bedford's Fruit Farm, Woburn, and continued over a number of years have, we believe, so far failed to offer any hope of a remedy for this pest. Mr. Collinge², however, in the *Journal of the Board of Agriculture*, at the beginning of the present year claims to have discovered by the application of lime and sulphur "a practical and effective cure, which can be easily applied at a relatively small cost." Theobald in his report states that Collinge's method "has been carried out for two seasons on some bushes (20), and this year the big-bud is worse than ever. The bushes were not dusted as Mr. Collinge suggests, three times, but last year 13 times." The writer of this review has not had the opportunity of putting Mr. Collinge's method to a practical test, and is therefore not in a position to discuss the question; but

in the light of Mr. Theobald's statement the newly-claimed remedy does not, unfortunately, inspire much confidence. The time is young yet, however, and we must patiently await the next season's results, which should definitely settle the question; meanwhile we hope that this latest discovered remedy will be put to the test by fruit-growers, and that it will meet with that success to which the author has, on his own showing, justly laid claim.

One of the most instructive portions of this report is that devoted to the woolly aphids. It has been conclusively proved that the damage done by the root form of this pest is much more severe and more widely distributed than was generally supposed. In view of this fact Mr. Theobald attributes the failures to destroy mealy bug to having hitherto ignored the presence of the migrating ground form. For winter washing the "old caustic alkali wash or the more improved Woburn wash" is recommended, and for the root form the injection of bi-sulphide of carbon.

Altogether 119 pests are dealt with, chiefly under the following heads:—Those injurious to man's domesticated animals, to fruit trees, corn, root crops, to pulse, hops and vegetables, flowers, forest trees, food-stuffs, and those causing annoyance to man. These headings will give a good idea of the scope of the work which, collectively, forms a valuable help towards the consideration of our present knowledge of Economic Zoology.

INSECT HUNTER'S COMPANION.*

THE instructions offered in this useful little guide will undoubtedly serve to initiate or to stimulate the study of insect life and lead to a successful pursuit of entomology. It contains the result of many years' experience both of the author and his collaborators; and though it is intended in the main for the naturalist who wishes to know where to collect and how to rear insects, also the method of preserving them for the cabinet, the young horticulturist or agriculturist who is undergoing a scientific training in these subjects will also find in its pages many valuable hints.

Mr. Farn is to be congratulated on the re-issue of a work which will prove, as the previous editions have already done, useful alike both in the field and study. R. N.

PLANT NOTE.

MELALEUCA HYPERICIFOLIA, &c.

WE lose much beauty in the garden and greenhouse by discarding the New Holland plants that were prized in the middle of the last century, and are as easy to grow into good specimens and to flower well, as tuberous-rooted Begonias and American Carnations. The *Melaleucas* have sessile flowers, produced on long clusters. *M. hypericifolia* has flowers of dull rose colour; *M. fulgens* is more showy, and is much branched and erect in growth, the colour of the flowers being light red. These and many other New Holland (Australian) hard-wooded plants grow readily in a mixture of hard peat one-third, light loam one-third, and leaf-mould one-third, with a free admixture of sharp sand. Re-potting should be performed in April, using a wooden rammer in making the soil moderately firm. The drainage should be good, but not excessive. From June 1 till September 30 the plants are the better for being placed out-of-doors in a fairly sunny aspect, and syringed at about 5 p.m., if the day has been bright. It is best to plunge the pots in coal ashes or coarse gravel. J. H.

* Report on Economic Zoology, for the year ending April 1st, 1907, by Fred. V. Theobald, M.A., South-Eastern Agricultural College, Wye, Kent. Headley Bros., London, and Ashford, Kent. Price, 2s. 6d.

¹ Second Report of the Woburn Experimental Fruit Farm, 1900.

² *Journal of the Board of Agriculture*, vol. xiii., p. 585.

* *Bees for Pleasure and Profit*, by G. Gordon Samson. 8rd edition. Revised and enlarged. Published by Messrs. Crosby, Lockwood and Son. Price 1s. net.

* *The Insect Hunter's Companion*. By the Rev. Joseph Greene, M.A. Revised and extended by A. B. Farn. Fifth edition. West, Newman & Co., and Sunplan, Marshall & Co., Ltd. Price 1s. 6d.

The Week's Work.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq.,
Eastwell Park, Kent.

Perpetual-flowering Carnations.—Tie the shoots to stakes as required. Discontinue the pinching of the points out of the shoots of plants which are expected to flower in winter. The best stakes for supporting Carnations are those prepared from Bamboo points and dyed green; they are easily obtainable from the sundriesmen. These stakes are capable of lasting for a considerable time, and they always look neat. Syringe the plants occasionally with weak, clear soot water, this being very beneficial to the plants and of use in keeping down insect pests. The new strain of tree Carnations is proving more and more valuable, and there appears to be scarcely any limit to the flowering capacity of the plants. A batch we commenced to cut flowers from last October is, at the present time, bearing a free crop of flowers of good quality, and there is every appearance of further flower buds forming. The cultivation does not present any serious difficulty. Inexperienced cultivators sometimes

work, glass and stages, and afterwards sponge or spray the plants with a safe insecticide. In sponging such plants as *Codiaeums*, *Pandanus*, *Aralias*, and similar species with brittle foliage, extra care must be taken not to break or twist the leaves; the effect of such twisting may not be noticeable for some days afterwards, but it will eventually cause great disfigurement.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow,
Cornwall.

Narcissus.—Every three or four years the bulbs of the various species and varieties of *Narcissus* should be lifted, sorted, and re-planted. A change of soil is desirable, but if this is not possible, then extra care should be taken to plant only the very best and healthiest bulbs. Bulbs of second quality should be planted in vacant spots in the wild garden, or in the shrubbery. Some good bulbs of early varieties, including the single and double Lent Lilies—*N. Pseudo-Narcissus plenus*—and the *Polyanthus Narcissus*—*N. Tazetta*—should be planted on a warm, sunny bank to supply the earliest flowers.

Noisette and *Tea* varieties should be removed, and any shoot of undue length cut back to the level of the other growths. The ground is so wet from the rains that applications of liquid manure are inadvisable, and any feeding that may be needed is, under these conditions, best furnished by light dressings of some artificial manure. The budding of *Roses* should now be almost finished, but any long, ripened shoots near to the ground may be layered by cutting a notch in the underside of the shoot and pegging it into the soil. Cuttings of ripened shoots may either be rooted in pots on a hot-bed, or beneath a handlight in the sandy soil of a border. In both cases shading is necessary.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq.,
Cobham Park, Surrey.

French Beans and Butter Beans.—Sowings may be made of these useful vegetables. Select a warm position, and sow the seeds in lines arranged in such a manner that they may have frames or lights placed over them later in the



FIG. 49.—CARNATIONS NOW FLOWERING AT EASTWELL PARK, KENT.
(See "Plants Under Glass.")

[Photograph by D'ath.]

make a mistake in "coddling" the plants in winter. At that season plenty of fresh air is necessary to keep the plants healthy.

Souvenir de la Malmaison Carnations.—The one-year-old plants now passing out of flower should be re-potted, giving each a fairly good shift, according to the strength of the plant. Make the soil very firm, and use a similar compost to that advised in the calendar published in the issue for March 22. After the re-potting has been carried out, place the plants in a well-ventilated house or frame, or in favourable localities they may be placed out-of-doors; but on no account allow the plants to become saturated by continuous heavy rains, or trouble may be expected in the following winter. [If the weather is at all showery the leaves are likely to become soft, and, therefore, more susceptible to fungus disease.—ED.]

Plant-houses and stoves.—The plants in this department having made considerable growth during the summer season, an occasional rearrangement is beneficial, changing the position of, and giving more space to, plants required for special purposes. Take the opportunity when doing this, to thoroughly cleanse the wood-

A lesser number of such later kinds as the *N. poeticus*, *N. biflorus*, the sweet-scented *Jonquil* (the double-flowered *Queen Anne's Jonquil*, a desirable but neglected form) should also be planted.

Roses.—As soon as the *Pillar Roses* have finished flowering, many of the old growths should either be entirely removed or be cut back to a point near to the ground, where strong, new growths have probably started. The current season's shoots must be kept fairly thin, so that those which remain may become well ripened. The new growths which are preserved should be loosely tied to the pillars; a free circulation of air is essential, and the tying should merely serve to prevent injury by winds. Such climbing *Roses* as *Gloire de Dijon*, *Cheshunt Hybrid*, *Climbing Captain Christy*, *Kaiserin Frederic*, &c., will not need such vigorous treatment in pruning as benefits the *Polyantha* varieties, and, as a rule, the partial shortening of the older branches and the removal of feeble shoots will suffice, but any plants which are weakly should be pruned severely. A mulching of manure and copious waterings during dry weather will be beneficial at this stage. Untidy flowers of H.P.,

season; or sow the seeds in frames, where they could be fully exposed to the weather until there is danger of damping, or likelihood of frosts occurring, when the lights would need to be put on, and the plants further assisted by the employment of a little fire heat. Such cultivation will considerably extend the season during which Beans are obtainable, and the produce will be very useful in the autumn, when so many of the summer vegetables fail before it is considered time to commence to use those intended for winter consumption. For this late sowing, and for the earliest sowings, we have tried many varieties, but have obtained the best results from the variety *Wythes' Bountiful*, which has a very dwarf, compact habit, that helps to make it particularly suitable for inside culture. Both *French Beans* and *Runner Beans* require a plentiful supply of water during dry weather, especially if mulchings have not been applied. Keep the Beans closely picked for consumption in order that the plants may continue to bear longer; they will certainly suffer untimely exhaustion if the Beans are allowed to hang on and become too old for cooking purposes.

Carrots and Turnips.—If the sowing of these two vegetables has been delayed, the work

should be carried out at once. Of varieties of Carrots, select Early Gem and French Horn, and of Turnips, the more hardy varieties will be most suitable, as was advised in a previous number. Indifferent results will follow if seeds are sown later than August 20, unless they are merely sown for the production of tops for use in the spring, which, although very useful, are generally only a secondary consideration.

Cardoons.—If these have been grown according to the directions given early in the season, they will have made sufficient growth to require blanching, which should be done by wrapping them round with hay bands, afterwards earthing them up with soil. This earthing-up must be done by degrees and as growth proceeds. By making a start now the plants should be ready for use at about the middle of October.

Potatoes.—All early and second early varieties should now be lifted, unless there are any that were planted late for the object of giving a late supply of "new" Potatoes, in which case the tubers should be lifted as they are required for consumption. Where it is intended to save seed-tubers for planting next season, these should be selected straight away and stored separately, protecting them from the wet, but fully exposing them to the light and air. This treatment is to be recommended in preference to the old system of exposing the tubers at the base of a wall out-of-doors, as the heavy autumn rains not only frequently soak the tubers, but saturate the ground under them, causing decay to arise and tending to spread disease.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Surrey.

Ventilation.—The weather having become warmer, the cultivator will be apt to afford too much air to the inmates of the cool or Odontoglossum house. Should the atmospheric temperature out-of-doors range from 55° to 65° with rain falling, there is but little fear that the ventilators may be opened too wide, but when the temperature outside is between 60° and 70° with hot sunshine, the surface of the ground being quite dry at the time, it is a mistake to open the doors or ventilators so wide as to admit large volumes of dry air, or to open such ventilators which are directly opposite to each other, so that a strong draught will thereby be caused. This kind of treatment is oftentimes supplemented with frequent syringings overhead, and waterings at the root, in order to counteract sufficiently the aridity of the atmosphere of the house. I have lately observed such treatment in several collections, and the plants in consequence have become debilitated. It is impossible to lay down any hard and fast rules in regard to ventilation, as much depends upon the position of the house, whether it is situated high up on a hill, or in some low-lying district. The safest course to follow is to admit only as much air as can be kept fairly well charged with moisture, by damping the floors and stages two or three times a day, taking care not to admit much air when the weather is hot and drying. In small houses the bottom ventilators should be used most, except on warm, damp nights when the top ventilators may be opened wide after sunset. Exceptionally long, wide, and lofty houses can be best ventilated through the openings at the apex of the roof. During warm days it is advisable to maintain an atmospheric temperature a few degrees cooler than the air in a shady position out-of-doors. The houses at Burford are of moderate size, and we keep the lower ventilators always wide open, and the top ventilators slightly open, when the external air is warm and there is little wind. These top ventilators we close just previous to the last damping down, which is done at about 4 p.m., in order to get the house thoroughly charged with moisture for the night. When finishing up the last thing, these top lights are slightly opened again if the weather is mild and damp. At the present time the majority of the inmates of this house are just commencing to push up their new growths, but the plants should not be too freely watered, or the old roots will decay before new ones make their appearance. There are some plants that have their new growths well advanced, and are pushing out many young

roots. These will require copious waterings whenever the compost becomes fairly dry.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq., Norwood, Alloa, Clackmannanshire.

Muscat of Alexandria Grapes.—Grapes which are already ripe will require careful attention in order to keep them in good condition. The atmosphere should be kept cool, and a free circulation of air allowed through the top and bottom ventilators. It will be necessary to keep the water pipes just warm, especially at night, in order to dispel damp, a dry atmosphere being essential. Cover the outside borders with sashes to ward off heavy rains. Muscats are liable to decay at the neck of the berry if the vines receive a soaking of water at the roots after the berries are ripe. Even in the absence of such water, the berries are apt to decay during very hot weather, especially after such a cold, wet season as that of 1907.

Later Muscat Grapes.—Vines having fruits that have finished stoning and are now commencing to colour, will require the atmospheric moisture gradually reduced as colouring advances, and after three weeks damping may be discontinued altogether. Keep the house well ventilated by day and night, and the atmosphere dry. Protect the outside borders from the rains. Maintain a considerable degree of heat in the water-pipes (never overheating them), except when there is sunshine, as this will allow of fresh air being admitted to the house. The atmospheric temperature of the house should not exceed 75° at night or 90° during the day. Keep a sharp look-out for red spider, and if this pest is present sponge the leaves with soft soap and hot water, or syringe them in the evening. Be careful not to direct the syringe against the bunches, or they will be disfigured, unless the water is very clean and pure.

Madresfield Court Grapes, which are now quite ripe, will require to be kept as cool as possible, and treated to an abundance of fresh air by night and day. Keep a sharp look-out for decayed berries, and cut or pull them out as soon as they are detected. This variety is such a thin-skinned Grape and liable to decay, the berries require to be examined every day. It is not a Grape that will keep in good condition for a long period.

Strawberries.—Plants in 3-inch pots should be shifted into their final pots without delay. Afford the roots plenty of water if hot weather continues, and manure water also, to assist in building up strong, healthy crowns. Do not place the plants too closely together and so cause them to become drawn. During growth they require to be given a well-exposed position where they will get the sun's rays all day. Place them on a hard base, preferably one formed with ashes. To prevent them rooting through the pots, turn each plant round, or shift all of them to another place occasionally. As soon as runners are observed they must be cut off.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to LORD CLINTON, Bickton, East Devon.

Morello Cherries.—These fruits are usually ready for bottling at this date. They should be gathered when perfectly dry, and be placed very thinly on large, shallow trays or similar receptacles. Select those fruits for bottling that are of a deep, blood-red colour, and cut the stalks with either a sharp knife or a pair of scissors, so that no juice will be lost. Fruits intended for jam making should also receive careful attention, but they need not be quite so ripe for this purpose as in the case of those for bottling. Morello Cherries are much appreciated for the making of tarts, and it is usual to retain part of the crop on the trees as long as is possible for this purpose, but when signs of shrivelling or general decay are apparent the fruits should all be gathered. We experience some difficulty in this district, which has usually a moist atmosphere, in keeping the fruits sound after the middle of September. When sending them a considerable distance, shallow boxes, deep enough for one layer of fruits only, should be used.

The Fig.—In normal seasons in these gardens a dish of Figs can generally be had about the middle of this month, but they will be quite a fortnight later in ripening this season. Figs should be gathered when they are quite ripe; a half-ripened Fig is most insipid in eating. Wasps are particularly fond of Figs, therefore, bottles containing beer or cider sweetened with sugar should be hung on the trees. A Fig that has been ripened by the direct rays of the sun shining on it is of very much better flavour than one that has grown in a less favoured position, hence the necessity of keeping the growths thinly trained at all seasons.

The Loganberry.—This fruit has been very fine this season; it is a matter of surprise the plant is not grown more extensively in gardens. A suitable method of training the long growths is to obtain larch poles from 10 to 12 feet in length, and to set these at this distance apart, with a piece of batten on either side to keep them in position. It is an easy matter to train the growths right and left of this structure, and a plant should be set at the base of each upright. The old canes, after they have borne fruit, should be cut out near to the base of the plant, so that the new growths may receive the full benefit of the sun; the new shoots should be reduced to a moderate number, for if too many remain the crowding will end in comparative failure.

Autumn-fruiting Raspberries.—The canes will require supporting either with stout cord or with wire stretched on stakes along the centre of the row. The frequent rains of this summer have suited this fruit, and there should be good crops, provided the weather of autumn is favourable.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

Painting fencing, railings, &c.—The painting of the various kinds of ironwork used about a public park forms, as a rule, a considerable item in the annual bill for labour and materials. The proper maintenance of iron railings alone costs a considerable sum annually, and if the work is not very carefully carried out it is often only so much waste. Ironwork should never have any paint applied to it until all rust and dirt have been removed, and in the case of new iron the mill scale should be scraped off and the surface burnished. Strips of card-wire nailed upon flat pieces of wood form excellent material for use in burnishing after the worst of the rust has been removed with an iron scraper. The burnishers should not be very far ahead of the painters, in case rain may fall, when the work would require to be done over again.

Applications of paint.—It is usual to apply three coats of paint to ironwork unless it is painted every year, when one is generally sufficient. The first coat should consist of a lead paint, and the second and last of an oxide paint. As a check upon the men engaged in painting, whether they are employed by a contractor or employed direct by the department, it is always a good plan to have the colour of each coat of paint distinct from the others. In this way it is a very simple matter to see that the three coats arranged for are actually applied. At one time, when the painting of iron fencing was not considered to come within the scope of practical painters' work, we used to employ ships' painters for the purpose, with very satisfactory results. Recently it has been decided that technically it is painters' work, hence house painters must in future be engaged for all painting purposes. Of course where tar or bitumen is used in place of paint, unskilled men may still be employed.

Time for painting.—In the past we have always carried out the painting of railings during the summer months, when the air is driest and when there is least risk of having the paint washed off with rain. This year—perhaps fortunately—it was decided to postpone painting the fences until the winter, when dust is not so troublesome and the sun has not such a detrimental effect upon the paint by cracking it. Whether the advantages of doing the work at this period of the year will outweigh the disadvantages has yet to be proved, although several practical men have assured me that, provided frost is not prevalent, painting done in winter is much the best.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, AUGUST 17—

Sheffield Fl. Sh.
German Gard. Soc. meet.

TUESDAY, AUGUST 20—

Roy. Hort. Soc. Coms. meet.
Brighton Fl. Sh. (2 days).
Brit. Gard. Assoc. Ex. Council meet.

WEDNESDAY, AUGUST 21—

Shropshire Hort. Soc. Sh. at Shrewsbury (2 days).
Charlton Kings Fl. Sh.

THURSDAY, AUGUST 22—Aberdeen Fl. Sh. (3 days)

FRIDAY, AUGUST 23—

Roy. Bot. Soc. meet.
Rose Sh. in Manchester Botanic Gdns.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—61.1°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, August 14 (6 P.M.): Max. 73°; Min. 61°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, August 15 (10 A.M.): Bar 29.7; Temp. 65; Weather—Sunshine, with occasional clouds.

PROVINCES.—Wednesday, August 14 6 P.M.: Max. 67°, Bournemouth; Min. 54°, North of Scotland.

SALES FOR THE ENSUING WEEK.

MONDAY—

Great Sale of Dutch Bulbs at Messrs. Protheroe & Morris's rooms, 67, Cheapside, E.C., at 10 o'clock.
Trade Sale of Japanese and Azorean Liliiums, &c., at Messrs. Protheroe & Morris's rooms, 67, Cheapside, at 2 o'clock.

THURSDAY—

Dutch Bulbs at Messrs. Protheroe & Morris's rooms, at 10 o'clock.

FRIDAY—

Importation of *Odontoglossum crispum* (Pachs' type) Orchids in flower and bud, at Messrs. Protheroe & Morris's rooms, 67, Cheapside, E.C., at 12.45 o'clock.

Ants as Gardeners.

The reference made to "Ants as Cultivators of Fungi," by the Rev. George Henslow, in the last number of the *Journal of the Royal Horticultural Society* (June, 1907, p. 99), reminds us that although ants in this country are not without interest, yet, in tropical regions, they play a much more important part in the economy of Nature than they do here. By cutting off leaves, flowers, fruits, &c., which they carry home to their nests, certain species make gardens in the combs on which they grow fungi. "The fragments are cut up at home into small pieces, kneaded soft by the feet and mandibles, so that but few cells remain unbruised." This mass soon becomes permeated with mycelial threads, which produce rounded, whitish nodules, the so-called Kohl-rabi clumps that serve the ants for food. As long ago as 1781 Smeatham stated that certain species of termites grew a fungus in the chambers of their nests, and that they used this fungus for food. In 1847 the Rev. M. J. Berkeley described several species of fungi from ants' nests in Ceylon, from specimens sent home from that country; while, more recently, Penzig, Saccardo, Holtermann, Hennings, Nyman, and Dörflein have added to the list of names given to ant-hill fungi.

As so many of these species have been described from dried specimens, it is no wonder that their synonymy is somewhat complicated.

The Government mycologist resident at the Royal Gardens, Peradeniya, Mr. T. Petch, has recently given his attention to this interesting subject, and, in a critical memoir, published in the *Annals of the Peradeniya Gardens**, for November, 1906, arrives at the conclusion that the commonest fungus of termite nests in Ceylon is really a *Volvaria*, *V. eurhiza*, Berk. Originally described by Mr. Berkeley as an *Agaricus*, it has had many designations, thus:—*Volvaria eurhiza* (B.), *Agaricus* (*Armillaria*) *eurhiza*, B. Hooker's *Journ. Bot.* 6 (1847), p. 483; *Lentinus cartilagineus*, B. Hooker's *Journ. Bot.* 6 (1847), p. 469; *Collybia sparsibarbis*, B. and Br. *Linn. Trans.* 27 (1870), p. 151; *Agaricus* (*Pluteus*) *Rajap*, Holtermann, *Festschrift für Schwendener* (1899), pp. 411-321; *Pholiota Janseana*, Henn., and Nym. *Monsunia I.* (1899), p. 18; *Flammula Janseana*, Henn., and Nym. *Monsunia I.* (1899), p. 154.

Mr. Petch summarises his work as follows:—

1. The existence of fungi in some termite nests is a matter of common knowledge. In Ceylon, fungi are found in the nests of ground-inhabiting species, but have not yet been demonstrated in the nests of those which inhabit trees. The species here dealt with are *Termes redemanni*, Wasm., and *Termes obscuriceps*, Wasm.; both are ground-dwelling and mound-forming species.

2. The termite hill is built of the earth excavated in making subterranean chambers, and was originally only a convenient method of disposing of this material. The chimneys form a permanent scaffold, and have little effect on the ventilation of the nest. They are not correlated to the size of the nest in any degree.

3. The particles of earth used in constructing the hill and chimneys are covered with saliva in the nest, and are then brought up and placed on the new work.

4. The fungus grows on a comb, which consists exclusively of the excreta of the termites. These combs occur in every chamber except the royal cell. There is no allocation of different chambers for special purposes. Combs vary in form according to the species of termite inhabiting them.

5. The mycelium on the comb bears small, white, stalked or almost sessile "spheres." These consist of branching hyphæ, bearing either spherical or oval cells. The spherical cells do not germinate. The oval cells germinate readily, but it has not been possible to reproduce the "spheres" from them.

6. When the comb is old, an agaric grows from it. This agaric appears in two forms, one of which has been assigned by various mycologists to *Lentinus*, *Collybia*, *Pluteus*, *Pholiota*, and *Flammula*, and the other to *Armillaria*. It develops in a cartilaginous, almost gelatinous, universal veil, and is a modified *Volvaria*.

7. Sclerenchymatous cells occur at the base of the agaric stalk and in aborted agarics.

8. It has not been possible to germinate the spores of the agaric, or to grow the sphere-producing mycelium from its tissues.

9. When the comb is enclosed in a bell jar, *Xylaria stromata* are produced. Sclerotia may also be formed; the same stromata grow from these. This *Xylaria* is probably *X. nigripes*.

10. The shape of the stroma and conidiophore depend on the age of, and amount of moisture in, the comb.

11. When sown on agar, the spores of these reproduce the *Xylaria stromata*.

12. These stromata occur most abundantly on combs which have produced an agaric.

13. After continued rain, *Xylaria nigripes* grows from deserted termite nests.

14. Other fungi which grow on combs removed from the nest include *Mucor*, *Thamnidium*, *Cephalosporium*, *Peziza*. As these are not found in the nest, though some of them are capable of development under ground, it is probable that the termites "weed out" foreign fungi from the cultivation of the comb. The comb material is probably sterilised by its passage through the alimentary canal.

15. That the spheres form the food of the termites is probable, as in the case of the leaf-cutting ants; neither case can be considered definitely proved. *Termes redemanni* and *T. obscuriceps* undoubtedly prefer fungi, or wood which has been attacked by fungi.

16. Whether a difference in food causes the differentiation of termites into workers, soldiers, and sexed insects is not decided.

17. A Ceylon agaric, *Entoloma microcarpum*, possesses a mycelium composed of spheres of swollen cells; the details of these spheres resemble the parts of the termite spheres, but are not so highly developed.

18. It is most probable that the "spheres" in the termite comb, and the "Kohl-rabi-häufchen" of the leaf-cutting ants investigated by Möller, are parts of a normal mycelium, and that their shape is modified by the insects only in a very slight degree, if at all.

19. The available evidence appears to show that the "spheres" are part of the mycelium of the *Volvaria*, but it has not been possible to connect these forms experimentally.

The paper is illustrated by 19 plates from photographs of the exterior and interior of the nests, the combs, the agarics, the spheres, mycelium, the *Xylaria*, other fungi, microscopic details, &c., and it affords a valuable contribution to our knowledge of this interesting subject.

OUR SUPPLEMENTARY ILLUSTRATION affords a view in the Water-lily house at Shipley Hall, Derby, the residence of E. MILLER MUNDY, Esq. This structure was formed in March of last year from an old Palm house, which was provided with a new lean-to roof and a central tank for the accommodation of tender species of *Nymphæa*. The house is so adapted that it forms a Water-lily house in summer time and a greenhouse-conservatory in winter, see fig. 50. The water basin which occupies the centre of the house is 38 feet in length and 12 feet in width, inside measurement, whilst the depth is 2½ feet. Close to the sides of the basin, and a few inches only from the bottom are flow and return 4-inch hot-water pipes, which are provided with valves, so

* "The Fungi of Certain Termite Nests," T. Petch, *Annals of the Royal Botanic Gardens, Peradeniya*, Vol. III., Part II., November 1906.



COSMOS SULPHUREUS; A SHOWY ANNUAL PLANT WITH REDDISH-ORANGE
COLOURED FLOWERS.

that the temperature of the water can be regulated to 70° in winter and 85° in summer. The temperature of the house is that of a moderately warm greenhouse. Sunshine being so important a factor to the well being of *Nymphæas*, no shading whatever is employed, and the walls and the benches are furnished with plants which like plenty of sunlight. At the foot of the lofty back wall are planted, in a border raised 3 feet from the floor and 30 inches in width, *Bougainvilleas*, *Heliotropes*, Citrons, a specimen of *Swainsonia* and another of *Acacia dealbata*. An end wall is covered with *Camellias*. The front stonework of the back border is draped with Ivy-leaved *Pelargonium* Mme. Crousse, and baskets of this and other varieties of *Pelargoniums* are suspended to the girder along the centre of the house, as is shown in the

year on April 5, and the photograph, from which our supplementary illustration was prepared, was taken on June 7. *N. stellata* is the most free in flowering. The blossoms open at about 6 a.m. and close from 1-30 p.m. to 2-30 p.m. *N. pulcherrima* is similar in habit to *N. stellata*, and produces magnificent flowers which are rather longer in opening than those of the first-named species. These Water-lilies are both sweetly scented. *N. gigantea* is a handsome plant. The flowers are very freely produced and it has foliage smaller than the other species at Shipley Hall. The flowers, if cut just before they are fully developed, will remain open night and day in a warm room, and will last in a fresh condition for a period of 10 days. *N. rosea* has the largest flowers and leaves, but the colour of the floral segments is

a view of the house as it appeared on February 5 last, and shows the structure furnished in this manner with Lilacs, Laburnums and similar plants. At the same time the side benches were occupied with *Hippeastrums*, which had 100 flower-spikes expanded. The partial shading of the *Nymphæas* by these plants caused no harm whatever to the water inmates. Flannel-weed was at first a nuisance, but the introduction of a dozen gold fish and some water-snails counteracted this trouble. Mr. J. C. TALLACK, the gardener, is to be congratulated on the success of this novel house, which is at all seasons a source of pleasure and an object of beauty.

THE LATE DR. MASTERS' HERBARIUM.—Mrs. MASTERS has presented to Kew the whole of



FIG. 50.—THE NYMPHÆA HOUSE AT SHIPLEY HALL IN WINTER.

(See also Supplementary Illustration.)

supplementary illustration. The side benches are furnished with flowering-plants, including *Schizanthuses*, *Fuchsias*, *Salvias*, *Richardias*, *Poinsettias*, &c. In the early part of February, plants of *Amaryllis* furnish these benches, and later they are gay with forced bulbous plants, *Azaleas*, *Lilacs*, &c. Several varieties of *Nymphæas* were planted in the tank at the commencement, but their number has been reduced to 11 plants, viz., five of *N. stellata* Berlin var., two of *N. gigantea*, and one each of *N. pulcherrima*, *N. rosea*, *N. Devoniensis* and *N. George Huster*. Each is planted in about two bushels of good soil in the form of a mound, and the crowns are about 18 inches below the surface of the water. They were planted this

not the most pleasing. The flowers of *N. Devoniensis*, when first expanded, are pink, but they change to red; those of the variety *N. George Huster* are of a deep glowing crimson colour, and the variety has handsome dark foliage. Both the last named are night-flowering varieties, but they are open also during the greater part of dull days. The *Nymphæas* do not reach their resting season in time to allow the water surface to be furnished with *Chrysanthemums*, but later, when the flowers and most of the leaves of the Water-lilies have disappeared, drain pipes are stood on end in the water wherever room can be found for them, and on these are placed various forced plants which are changed from time to time. Fig. 50 represents

the botanical collections and manuscript notes of the late Dr. M. T. MASTERS, F.R.S., except his complete herbarium of the British Flora, which, by his wish, has been sent to his native city of Canterbury. We are informed by the Director of the Royal Gardens, Kew, that the collections have not yet been examined, but that they doubtless contain some valuable materials, particularly of the groups of which Dr. MASTERS made a special study.

PROFESSOR D. J. BEHRENS, director of the Agricultural Research Station at Augustenberg, in Bavaria, has been appointed successor to Dr. ADERHOLDS, director of the Biological Institute at Dahlen.

FLOWERS IN SEASON.—Mr. AMOS PERRY, Enfield, sends seedling varieties of *Spiræa venusta*, with flowers of many shades of pink, both deep and light.

Messrs. TITT & SON, 24, Thames Street, Windsor, have forwarded flowers of a new *Scabiosa* named the Bride. The capitulum are almost globular in shape, and the florets pure white.

Messrs. JAMES VEITCH & SONS have sent us, amongst other interesting plants, flowering sprays of *Clethra canescens*, *Colutea melanocalyx*, *Eucryphia pinnatifolia*, a very handsome shrub, with large white flowers; *Romneya Coulteri*, *Cornus macrophylla*, one of the best of the genus; *Cytisus nigricans*, *Buddleia variabilis* var. *Veitchianus*, a form with large pyramidal-shaped inflorescences; *Senecio Veitchianus*, a suitable plant for the waterside; *Pavia macrostachya*, and many beautiful *Spiræas*.

Mr. T. SMITH, Daisy Hill Nursery, Newry, sends a form of *Comptonia asplenifolia*, with depauperated or interrupted leaves. The variation, Mr. Smith states, is to some extent fixed, as many plants come true from seed. Also *Centaurea atropurpurea*, a Servian species, with curious reddish-purple flowers. It grows 2 to 3 feet high, and the leaves are very handsome.

NURSERY EMPLOYEES OUTING.—By the invitation of Mr. HARRY J. VEITCH the heads of the various departments of the firm of Messrs. JAMES VEITCH & SONS, together with a few friends, visited East Burnham Park on the 5th inst. The company included Mr. JOHN GOULD VEITCH and the late manager of the King's Road Nurseries, Mr. THOMAS MANNING. A saloon carriage conveyed the party to Slough, where the visitors were met by Mr. HARRY VEITCH. Two large brakes conveyed the members to the seed trial grounds of the firm at Langley. After inspecting these, a trip of about four miles, through interesting, though flat country, brought the company to East Burnham Park, the country home of Mr. H. J. VEITCH, where Mrs. H. J. VEITCH and Mrs. J. G. VEITCH gave the company a cordial welcome. After partaking of lunch, a game of bowls was indulged in by some members of the party, a survey of the gardens and grounds made by others, and a game of cricket was also provided. At 6.30 the party prepared for the return journey to Slough by a different route, completing the run to London by rail.

BRUSSELS BOTANIC GARDEN.—M. LOUIS GENTIL has prepared an excellent list of the plants cultivated under glass in the Jardin Botanique de L'Etat at Brussels. The collections include about 1,000 genera, and 3,200 species. The list contains 5,700 names and synonyms, with their authors. The native country of each species is indicated and references are given to works containing illustrations. We have frequently referred to the richness of the plant collections in these gardens, especially of the Ferns, and numerous illustrations of the interior of the glasshouses have been reproduced in these pages. The garden is under the scientific direction of M. E. DE WILDEMAN, and M. LOUIS GENTIL is Curator. The latter gentleman is well known and respected in this country, having passed some time in the Royal Gardens, Kew, and in other horticultural establishments.

THE LAWES AGRICULTURAL TRUST.—We are informed that the following gentlemen have recently been appointed on the staff of the Rothamsted Experimental Station:—Dr. E. J. RUSSELL, lately of the South-Eastern Agricultural College, Wye, as the Goldsmiths' Company's Assistant for the Investigation of Soils; and Dr. H. B. HUTCHINSON, of the Midland Agricultural and Dairy College, Kingston, Derby, as Bacteriologist.

DISEASES OF BEES.—The Bureau of Entomology of the U.S. Department of Agriculture, in Bulletin No. 70, in its report of the meeting of Inspectors of Apiarists at San Antonio, Texas, on November 12, 1906, has embodied information concerning the diseases of bees. The appended list of subjects will show how important to apiarists in the States, and other countries, is the information given:—The bacteriology of bee diseases; the present status of the investigation of bee diseases; American foul brood on the Pacific Coast; symptoms of bee diseases; geographical distribution; comparison of diseases; infection in honey; infection of larvæ; bacteria in queens; black brood; infection carried to flowers; vitality of spores; existence of American foul brood and European foul brood; effect of climate on virulence; and treatment for bee diseases. Much of the information supplied is by the method of questions and answers, and it is interesting, even to the general reader. The Bulletin may be obtained from the office of the Department of Agriculture, Washington.



MR. ARTHUR C. SMITH.

MR. A. C. SMITH, ASSISTANT SUPERINTENDENT AT WISLEY.—Mr. ARTHUR C. SMITH, whose appointment as assistant superintendent in the Royal Horticultural Society's gardens at Wisley was recently announced in our columns, commenced his gardening career under his father, who was for upwards of 30 years head gardener at Dormont, in Dumfriesshire. Mr. SMITH on leaving Dormont came south to Yorkshire, and for two years he was in the service of Sir JOHN RAMSDEN, Bart., at Byram Park, Ferrybridge. He next served in the gardens at Brayton Hall, Cumberland, the seat of Sir WILFRID LAWSON, Bart., and later at Petworth Park, Sussex, the seat of the Earl of LECONFIELD. From this latter place he became foreman at Ascog House, Isle of Bute. A second journey south, this time to Devonshire, was for the purpose of accepting the general foremanship at Knightshayes Court, Tiverton, the seat of Sir JOHN H. AMORY, Bart. Mr. SMITH's first office as head gardener was at Eden Hall, Langwathby, Cumberland, which post he held for nearly six years. He has also served in this capacity for nearly 2½ years at Woodlands Park, Leatherhead, and three years at Lydhurst Gardens, Haywards Heath, where he was engaged at the time of his recent appointment.

THE DIFFERENT SOILS IN STAFFORDSHIRE.

—We are informed that Mr. J. J. WILLIS, of the Rothamsted Experimental Station, Hertfordshire, is arranging to deliver a lecture at Market Drayton, Shropshire, during next week, to farmers on the subject of the food requirements of the Staffordshire soils as indicated by the natural growth of the weeds and the various field crops.

A NEW HYBRID NYMPHÆA, L. DITTMANN.

This hybrid is the result of a cross between *Nymphæa zanzibariensis* var. *cœrulea*, which has flowers of a deep blue colour, with another blue-flowered Australian species belonging to the *gigantea* group. It was raised, says *Gartenflora*, in Hrn. H. HENKEL's nursery at Darmstadt in 1902, and it flowered with him in the two last summers. The agreeably-perfumed blooms have a diameter of 22-25 cm. and are of a tender Peach tint; if the flowers are removed from the plant, they become of a bluish tinge the next day; but no such change takes place in the blooms while on the plant, excepting under low temperature in late autumn. The blooms are finer in colour than *N. zanzibariensis* *rosea* and *rubra*, of flatter form, and larger. The anther mass is bright yellow, with light pink coloured points, and the stigmatic surface broad and flat; the sepals are green on the outside, and the points sideways incurved; interior white, with greenish nerves. The plant is of vigorous growth; blooms freely, even in water of a low degree of warmth. Like all strong-growing aquatics, it needs rich feeding, and water of not less than 15-25 cm. in depth. The plant is named after the successful cultivator of *Nelumbiums*, L. DITTMANN, of Darmstadt.

THE PEAR THRIP.—The destructive Pear Thrip (*Euthrips pyri*, Daniel) is a pest of deciduous fruit trees in the San Francisco Bay region of California. So widespread and injurious is this insect in the Santa Clara county, that an investigation was undertaken at the request of the county Board of Supervisors, who furnished the funds and liberally granted necessary facilities for a thorough and scientific study. The investigation extended through a period of 15 months from February, 1904, to April, 1905. The results of this investigation are incorporated in the issue, in June of the present year, of a pamphlet of 16 pages by the U.S. Department of Agriculture, from the pen of Mr. DUDLEY MORTON, who is engaged in investigations concerning insects which attack deciduous fruit trees. This publication contains matter relating to the mouth parts; relation of the budding and blossoming of trees, to the feeding habits of the thrips; feeding habits of larvæ; life-history—the egg, the larvæ; the nymph or pupa, and the adult; methods and natural factors in control; sprays, cultivation and natural enemies. A fungus, presumably parasitic, was prevalent among thrips during the seasons 1905 and 1906. In its different stages it lives on both young and mature thrips, and in a way parallels the life of its host. Mrs. F. W. PATTERSON has determined the fungus to be a species of *Cladosporium*. The life history of the fungus has been determined only in part.

APPLE HEINSBERG'S NONPAREIL.—This variety is highly commended by H. WIESNER in *Thalacker's Handels Journal* for its rapidity of growth, its cone-like habit of growth, and good keeping properties. In good loam without manure, budded plants on healthy, vigorous stocks of the Crab reach a height, in the first year, of about 3 feet 7 inches; in the second year, with or without severe cutting back, the stem reaches standard height, and in the third year after budding, the crown has made shoots 24 inches in length, the plant being then of saleable size as a standard. The writer of the note in *Thalacker's* is the manager of the Grand Ducal Nursery at Friedberg.

AMERICAN ASSOCIATION OF PARK SUPERINTENDENTS.—The American park superintendents are holding their annual meeting in Toronto during the present week. Papers were to be read upon such subjects as "Band concerts in smaller or district parks," "Aquatic gardens," and "Some new or little-known trees and shrubs for planting in parks." In our own country the park superintendents have not as yet formed a similar association, but public parks are now so numerous that if any movement of the kind were started, it would doubtless be successful.

Publications Received.—*Weather*, by the Hon. H. A. Stanhope, published by the Agricultural and Horticultural Association, Ltd., price one penny.—*Report on the Injurious Insects and Other Animals Observed in the Midland Counties during 1906*, by Walter E. Collinge, M.Sc., F.E.S. IV. Report published by Cornish Bros., Ltd., Birmingham. Price 2s. 6d.—*Fibres of the Jute Class*, by E. W. Davy, being a supplement to the *British Central Africa Gazette* of May 31, 1907.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, ante, pp. 84-90.)

(Continued from page 105.)

4. MIDLAND COUNTIES.

BEDFORDSHIRE.—A lack of sunshine and cold weather has caused all crops to be very backward this season. I find that Apples, Pears, and Plums will produce good crops every other year only. It is remarkable that Plum trees of the variety Victoria both on wall and on standard trees are bearing heavy crops, and the foliage is clean; last year the reverse conditions obtained. Ours is a gravelly and sandy soil. *H. W. Nutt, Flitwick Gardens, Ampthill.*

—Notwithstanding the inclement weather experienced during May, June, and part of July, the fruit crops on the whole are very satisfactory, with the exception of Apples. On examining the Apple trees about the middle of June, they appeared very much affected with blight and mildew, and although insecticides were applied they proved of little use. At one time I attributed the damage to late frosts, but on consulting my weather register, I found that during the time the trees were in bloom no frosts were registered. Our soil is a light sandy loam, on a subsoil of chalk, clay, and sand. *George MacKinlay, Wrest Park, Ampthill.*

—The Apple trees in this district are badly infested with aphids, and this has caused a great check to the growth of the fruits; and from this cause a considerable number of the fruits have dropped. Apricots, Gooseberries, and Plums (Victoria in particular) have enormous crops of fruits, and they required much thinning. Strawberries have given good returns; the variety "Mentmore" ripened best during the sunless weather and proved itself almost immune from attack by mildew. *Wm. F. Palmer, Froxfield Gardens, Woburn.*

BUCKINGHAMSHIRE.—Notwithstanding the cold weather of early summer, the fruit crops in this neighbourhood are exceptionally good, and the fruit trees generally seem to have escaped the effects of the late frosts. Apricot trees are generally short-lived in this district. Strawberries set an abundant crop, but the cold, wet and sunless weather spoiled many of the early fruits. *John Fleming, Wexham Park Gardens, Slough.*

—I have never seen the fruit trees in this district more heavily laden with blossom than they were this spring. Apples set well, but the prolonged wet and cold weather have prevented many of them from developing. The Pear crop is excellent, and the season seems to have suited this fruit. Cherries are a good crop, especially the varieties May Duke and Black Tartarian. Morellos are also plentiful. Apples are an average crop. Raspberries are plentiful, the variety Superlative being excellent. Gooseberries, Red and Black Currants are abundant. Strawberries have been a heavy crop, but owing to the inclement weather a number of the berries rotted on the plants; especially was this the case in the variety Royal Sovereign. Plums on wall trees are good, but bush and pyramid-trained

trees have very few fruits. Damsons are also a poor crop. The soil here is light and gravelly, resting on a subsoil of chalk. *G. W. Smith, Dunsfield Gardens, Marlow, Bucks.*

—Apple trees blossomed abundantly and promised well for a heavy crop of fruits, but cold, north-east winds and frost at night-time caused many of the young fruits to drop. Some varieties of Apple trees, however, have full crops, the best of dessert kinds in this respect being Cox's Orange Pippin, Wealthy, Chas. Ross, Beauty of Bath, and Langley Pippin; while, of culinary kinds, Warner's King, Grenadier, Loddington Seedling, Peasgood's Nonsuch, and Stirling Castle are the best cropped. I never remember such a plague of insect pests of all kinds as we have experienced this spring, notwithstanding that the trees were sprayed in February, and, in the case of trained trees, hand picking was resorted to. Pears are a poor crop on pyramid and standard-trained trees, but plentiful on wall trees. Plums are excellent, and this remark also applies to bush fruits of all kinds. Quite the best crop of the year in this locality is that of the Apricot. I attribute this to the dry, sunny weather when the trees were in flower, and also to the flowers opening much later than is usual. Strawberries promised well, but the dull, sunless weather of early summer and the excessive rainfall at the end of June caused the fruits of early varieties to rot badly. Late fruiting varieties were more satisfactory. *Chas. Page, Dropmore Gardens, Maidenhead.*

—Most of our fruit trees are badly blighted—never more so; and this appears to be general throughout the county. All the crops are very backward, but those already matured are fairly good. Givon's Late Prolific Strawberry on our cold soil has proved to be a more reliable variety and a much better cropper than Waterloo. In some orchards Greengages are very abundant. Our soil is a heavy loam resting on clay. *W. Hedley Warren, The Gardens, Aston Clinton, Tring.*

CHESHIRE.—Apples, Pears, and Plums, in their early stages, showed great promise for heavy crops, but, owing to continuous wet and cold weather, the number of these fruits will be much below the average. All the fruit crops in this district will be very backward. *J. Burdge, Moreton Hall Gardens, Congleton.*

—The prevalence of frost, and cold east winds, with an almost continuous downfall of sleet and rain, had a very injurious effect upon the Apple crop at the time the trees were blooming. Strawberries have suffered from a lack of sunshine and constant rains, and many of the berries have in consequence rotted on the plants. The soil in this garden is of a light texture, with a boggy sub-soil. *Peter Wilkinson, Walton Lea Gardens, near Warrington.*

—Generally the fruit crops in this district promise much better than could be expected after the severe frosts of May 20 and 21, when 5° and 9° of frost were registered. Currants and Gooseberries on exposed branches were badly injured by the cold, as were also Apples and Pears in the less sheltered portions of the gardens, while even Plums on wall-trees received a check, which caused quantities to drop. The absence of sunshine during June and early July has mitigated much against a quick and clean development of all kinds of fruits, and general disappointment in the condition of the crops prevails around here. *N. F. Barnes, Eaton Gardens, Chester.*

DERBYSHIRE.—A good set of fruits generally has been much reduced by the continuous cold weather and heavy rains during May and June. Strawberries were very late in ripening, and the flowers set badly owing to excessive rains. Our first picking out-of-doors of this fruit was on July 23. The best variety that withstood the effects of the untoward weather was Louis Gauthier. Many of the flower-scapes of this variety were 18 inches high, sufficient to rear them well above the foliage. Givon's Late Prolific also promises well. Gooseberries are a heavy crop of fine fruits, and the same remark applies to red and white Currants. The rainfall in these gardens for the year is greatly above the average, and totals 17½ inches (July 23). The abundant rains would have done much good had the temperature ranged higher during May and June. *J. C. Tallack, Shipley Hall Gardens, Derby.*

—The fruit trees on the strong clay soil of this district have not satisfactory crops. Bush

fruits, except Black Currants, are abundant. Improved cultivation of this latter fruit might be brought about by frequent plantings of strong, healthy bushes on well-trenched and heavily-manured land. The useful Loganberry is seen in a good fruiting condition in several of the cottagers' gardens in this neighbourhood. This fruit has no equal amongst the smaller fruits for jam making or for tarts, and the canes should be extensively planted by all fruit-growers. I consider Raspberry Superlative the very best variety of this fruit. The cold, wet weather has caused Cherries to become badly cracked. Strawberries in many places about here are quite a failure. This could be largely avoided in future years by making annual plantations from plants layered in pots and planted in good, firm, well-manured ground in the autumn. *Bailey Wadds, 181, Uttoxeter New Road, Derby.*

—The fruit crops in this district are in general very good, but owing to the heavy rainfall and a lack of sunshine in early summer, the fruits will be much later than usual in ripening. Apple, Pear, and Plum trees all blossomed well, but they have set an average crop only. Strawberries were plentiful, but they did not ripen well. Gooseberries are abundant. Raspberries, Black, Red, and White Currants are all heavy crops. With the exception of Plums, the trees are exceptionally clean and free from blight. Our soil is a medium loam on a sub-soil of gravel and clay. *James Tully, Osmaston Manor Gardens, Derby.*

HERTFORDSHIRE.—The soil in these gardens consists of some 15 to 18 inches of strong loam, which rests upon a bed of clay 3 feet in thickness. Under this latter strata is sand. Cherry trees flowered freely, and the fruits set well, but many dropped at the stoning period. I attribute this to the long period of dull and unseasonable weather which prevailed at this stage. Plum trees set a very large crop of fruits, but the adverse weather also affected these at the stoning period. The crop is about an average one, and the fruits are clean and of good quality. Apple trees flowered freely, and set a full crop, but there is an unusually large number of deformed and useless fruits. Pears are an average crop of clean, shapely fruits. Raspberries are very plentiful; the berries are large and quite the best crop for seven years past. Black Currants are also excellent in quality, and a very heavy crop. Trees of Peaches and Nectarines out-of-doors flowered profusely, set their fruits in plenty, and, though more than usual have failed at the stoning period, the crop is an average one, but it is doubtful whether any other than the earlier varieties will ripen well. *C. R. Fielder, North Mymms Park Gardens, Hatfield.*

—The fruit crops generally in this neighbourhood are much above the average. Apple trees in some places have suffered badly from an attack of green and black fly, but with better weather and the finishing of summer pruning there is every promise of a good harvest of these fruits. Apricots set so freely that more than half the fruits had to be removed. Gooseberries are a remarkable crop. *C. E. Martin, The Hoo Gardens, Welwyn.*

—The low temperatures and cold winds experienced during early May caused many Plums and Damsons to fall; up to that date the crops of these fruits were very promising. The long succession of sunless days in early summer doubtless accounts for the presence of aphids on Plum and Apple trees. Pears, Peaches, and Nectarines are all very plentiful. Small fruits are good. The soil here is of a fairly stiff nature, and rests on a varying sub-soil of gravel and clay. *H. Prime, Hatfield House Gardens, Hatfield, Herts.*

—The cold, sunless weather adversely affected the Apple crop, for, although the trees were wreathed in blossoms, the fruits did not set. Pear trees are carrying fair crops, notably the varieties Pitmaston Duchess and Marie Louise; the latter seldom fails when planted against a wall. Cherries, in common with other stone fruits, promised exceptionally heavy crops, but many of the fruits dropped at the stoning period. Plums, Strawberries, and small fruits are all excellent. The Loganberry never fails to yield a supply of its luscious fruits, and is deserving of a place in every garden. The soil here is a light loam upon a gravel sub-soil. *F. W. Gooch, Edge Grove Gardens, Watford.*

— Apples are plentiful, but the individual fruits promise to be small in size. Strawberries were a good crop, but owing to the exceptionally wet weather, many decayed before they were ripe. Gooseberries and Black, White, and Red Currants are all plentiful. I never remember having seen Raspberries in a better condition than they are this season. Nuts, with the exception of Walnuts, are scarce. Plums are a heavy crop. The soil in these gardens is of a very stiff nature, and rests on a light-coloured clay, and in some parts upon chalk. *William Poole, Hadham Hall, Ware.*

— All kinds of fruit trees flowered splendidly, but what promised to be the best fruit season for several years past has been ruined by the very unseasonable weather. On July 2 the thermometer registered only 37° Fahr. Our soil is very shallow, and rests on chalk. *Arthur Dye, Tring Park Gardens, Tring.*

— Generally the hardy fruit crops in this district are an average in quantity. The promise for a good Apple season was great when the trees were in flower, but the fruits set badly, and the trees are now badly infested with insect pests. The crops of Plums, Cherries, and Apricots are good. *Edwin Beckett, Aldenham House Gardens, Elstree.*

LEICESTERSHIRE.—The Apple crop in this district, considering the abundant promise when the trees were in bloom, is disappointing. Plums on standard trees are plentiful, but on the wall trees the crop of this fruit is thin, the frosts in April being responsible for the shortage. With the exception of Black Currants, bush fruits are a heavy crop. Strawberries have been much damaged by the excessive rains, which continued up to the middle of July. These fruits are three weeks later in ripening than usual. Givon's Late Prolific promises to be our best late variety. The soil in these gardens is a medium to heavy loam on a sub-soil of red clay. *D. Roberts, Prestwold Hall Gardens, Loughborough.*

— The failure of the Apple crop this season is due solely to exhaustion of the trees caused by last season's heavy crop; bush trees on cultivated ground which has been thoroughly well manured every year, are bearing good crops. Peach, Apricot, and Cherry trees benefited greatly by the hot weather of last autumn; this caused the fruiting wood to become extra well matured, with the result that the crops of these fruits are more abundant than I have ever before seen in this part of the kingdom. Strawberries have partially failed this season owing to continued wet weather at the time they commenced to ripen. Later varieties, such as Laxton's Latest (1904) and Waterloo, promise well; Pears are plentiful on wall and pyramid-trained trees, and they are swelling well. The Pear midge has not been so troublesome this season as in former years; persistently picking and burning the infested foliage no doubt accounts for this. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

NOTTINGHAMSHIRE.—Fruit trees had a large quantity of bloom this season, and the promises for a good harvest could scarcely have been better, but the cold, wet weather prevented most of the Apples and Strawberries from setting. Some few varieties of Apple trees, such as Lord Grosvenor, Ecklinville Seedling, &c., are laden with fruit, whilst late varieties, such as Bramley's Seedling, are almost a failure. No bees were working during the time the trees were in bloom. Strawberries are almost a total failure in many places. Cherries set freely, but many have since fallen off. *J. R. Pearson & Sons, Lowdham, Notts.*

OXFORDSHIRE.—Strawberries were not equal in quality to those of past years, and many of the berries were quite spoilt by the continued wet weather. Raspberries, Black and Red Currants, and Gooseberries are plentiful and of fine quality. Apple trees are very badly infested with blight, but Pear trees are healthy and are growing vigorously. Peaches set freely, but the new growths are weak. Cherries were formed freely, but many have dropped. The wet, cool weather of the past season has suited the crops in this garden, the soil of which consists of a light loam on gravel and chalk. *John A. Hall, Shiplake Court Gardens, Henley-on-Thames.*

— The late spring frosts and a long spell of cold weather when Apple trees were in full

bloom have ruined this crop. Even the foliage of Apple trees was much injured through these causes. Plums are a very heavy crop, and so numerous that many cannot possibly come to perfection. The weather last season being warm and dry, it favoured the ripening of shoots on Peach and Apricot trees out-of-doors, and this probably accounts for the heavy crop of these fruits. Pears are never a success with us. Cherries at one time promised to be a record crop, but excessively cold weather prevailed when the trees were in bloom, and the untoward weather also affected the Strawberry crop. Our soil is very stony and of a poor quality. The sub-soil is chiefly of clay. *A. J. Long, Wyfold Court Gardens, Reading.*

SHROPSHIRE.—Apples generally are an average crop, though some trees are sparsely fruited. Our best varieties this year are Bramley's Seedling, Cox's Orange Pippin, Lord Suffield, King of the Pippins, Tom Putt, Lane's Prince Albert, Pott's Seedling, Gascoyne's Scarlet Seedling, and Keswick Codlin. Plums and Damsons are remarkably plentiful. Strawberries rotted badly on the plants. Raspberries are good and clean. Our soil consists of a light sandy peat, and rests mostly upon a gravelly sub-soil and occasionally upon sand. *A. S. Kemp, Broadway, Shifnal.*

— The soil in these gardens has been improved; naturally, it is very shallow and of a poor, black, peaty nature, on a sub-soil of sand or a bastard rock, which is most injurious to the roots of trees, so that they invariably perish when they penetrate into it. The best varieties of Apple trees are short-lived, and produce fruits of inferior quality. Pear trees against walls planted in made borders produce better results. Plums succeed well here. All trees this spring showed an abundance of bloom. Apple trees are carrying good crops of fruit, but the shoots are badly infested with blight. Pears set well, but the Pear maggot destroyed more than half the crop; this pest is on the increase, though we combat it every season. Peaches and Apricots are plentiful, but small, and they will be very late in ripening. I am doubtful if many late Peaches will ripen. Bush fruits are good crops, but backward. Strawberries were largely spoilt by the excessive wet, and they were very late in ripening. *John Taylor, Hardwicke Grange Gardens, near Shrewsbury.*

STAFFORDSHIRE.—During their flowering period all kinds of fruit trees gave promise of full crops, but the continued cold and sunless weather experienced during the time the Pear, Plum, and sweet Cherry were in flower prevented the ripening of the pollen, and this accounted for the non-setting of a great many of the fruits. The fruits on the later varieties set freely, and the trees are carrying fair crops. Apples, with a few exceptions, are plentiful. Strawberries promised well when in bloom, but the continued wet weather, to nearly the middle of July, was the reason of a large number of these fruits rotting, and from the same cause many of the flowers on later varieties failed to set. Walnuts, Cobnuts, and Filberts are thin crops. The soil is a cold, stiff loam on a sub-soil of clay. *Geo. Woodgate, Rolleston Hall Gardens, Burton-on-Trent.*

WARWICKSHIRE.—Of Apples, it may be recorded they are again a failure. The flowering of the trees was everything that could be desired, and the failure is due to the continued cold weather at the time of blossoming. Visiting Barston Hall near here, I found the trees of an avenue of Bramley's Seedling, which generally produce a fine crop of fruits, with a solitary exception, entirely barren. A tree of Worcester Pearmain in the same orchard showed a good crop. Pears are much better, and some trees are furnished with abundant fruits. Of Plums and Damsons in this orchard, the crops are exceptionally heavy and good. Cherries, too, are plentiful. Peach, Nectarine, and Apricot trees on walls are also well fruited. Small fruits are everywhere plentiful and good. But five acres of Walnut trees are absolutely without fruits. Filberts, too, are scarce. The above remarks are also applicable to other gardens and orchards in this neighbourhood, and also of many trees in cottage gardens. I recently visited the Knowle Fruit Farm of about 40 acres, belonging to Mr. Tangye, and on asking this gentleman as to the condition of his fruit crop, he replied "Bad." The trees, however, were making good

growths. Mr. Tangye informed me that in future he intended to pay more attention to the matter of spraying. This precaution may kill aphides and mildew, but against damage by frost there is, unfortunately, no effective remedy known. *W. Miller, Berkswell.*

(To be continued.)

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

THE FLORA OF PALESTINE.—I must confess myself as quite unable to follow your reviewer's note. But, perhaps, I may be permitted to state what appear to me to be the most probable conclusions of modern criticism on the subject. 1. The true reading of the word translated Lign-Aloes in the Bible, almost certainly means terebinths and not tents. 2. The Aloes of other passages was not the medicinal drug, but Eagle-wood, which in this case was, I think, the product of *Aquilaria malaccensis* from S. Tenasserim. A full discussion would be too technical for your columns, but those who care to follow it may consult the article Aloes in the *Encyclopædia Biblica*, and that on Eagle-wood in Yule and Burnell's Glossary of Anglo-Indian words. *W. T. Thiselton-Dyer.*

EREMURUS ROBUSTUS AND OTHERS.—It is well to remind cultivators of these splendid plants that September is a suitable month for transplanting them. Great care should be exercised in handling the root-mass, for the spreading roots are easily broken. The plant needs a well-manured soil, and one that is well drained. The crowns should be placed about 8 inches beneath the surface of the ground, and a mulch of fine coal ashes or half-decayed leaves should be placed over them after the soil is frozen. It is advisable not to remove this protection too early in the spring-time, as late frosts are apt to injure the young shoots. *F. M.*

ARGEMONE GRANDIFLORA.—*A. grandiflora*, or more properly *A. mexicana*, though usually considered an annual, has been perennial in a warm and fairly dry border in my garden since I brought seeds from Mexico in 1888, but it has never attained anything like the dimensions given by Mr. Fitzherbert in his note on p. 113. After seeding freely it dies completely down every autumn. It was a cornfield weed in Mexico, and I found a plant, which cannot be distinguished, growing under similar conditions in Chile. This plant was apparently lost, or so rare, that it was unknown to most gardeners when I first raised it, though it was well figured in Sweet's *British Flower Garden*, 111, t. 226, as long ago as 1827 or 1828. I have given seeds to so many people that it should now be common. What is often grown under this name is *Argemone ochroleuca*, a Mexican plant with smaller, pale yellow flowers and quite different leaves, figured by Sweet in t. 242 of the volume already mentioned. *H. J. Elwes, Colborne.*

TIME FOR SOWING SEEDS OF CYCLAMEN.—While many growers of Cyclamen sow the seeds in November and cultivate the plants for two years, I am not giving a trade secret away when I say that some up-to-date nurserymen sow their seeds about August and flower the plants in the following season. Seed should be sown thinly in pots or boxes, over which should be placed a sheet of glass or paper. The young plants will require to be pricked into small pots as soon as the first leaf has fully developed, and they should be cultivated in a rather warm, moist atmosphere until early in the spring, when they should be ready for another shift into 3-inch pots. Towards the end of May or early in June they should be potted into 5-inch pots, and they will flower in this size very well, although a further shift early in July to a 6-inch or 7-inch pot would produce plants of a larger size. The secret of obtaining good plants in this short space of time lies in keeping the plants growing by repeatedly re-potting them. When the weather becomes warmer in spring the plants should be kept cooler, and in hot weather be afforded shade from sunshine, and an abundance of air. Now that there are flowers with such fine salmon shades, the Cyclamen is one of our best winter-flowering plants. *Z. J. C.*

GLADIOLUS GANDAVENSIS.—These bulbous plants should now be in fine bloom. Those we grow now as hardy Gladiolus are chiefly crosses between *G. cardinalis*, *tristis*, *blandus*, *carneus*, *inflatus* and *angustus*. The late Dean Herbert said that in his garden at Spofforth they bloomed at about the same time as the Roses. They succeeded best when he grew them in close tufts, which with the old skins of the decayed bulbs, permitted the moisture to drain away and prevented the soil from pressing too heavily on the corms in autumn and winter. Such tufts remained undisturbed for many years, but needed to be covered with leaves from November to March or April. If it is necessary to divide the clumps, it should be done late in the autumn, the corms being potted, and kept in a cold pit until spring when they may be turned out into the border; or it may be done in April. F.

ONOPORDON ACANTHIUM (the Cotton Thistle).—A plant of this species is growing in the pleasure grounds at Hatley Park, near Sandy, the seat of Sir Charles Hamilton, Bart. Its height is 12½ feet, and in circumference it measures 27 feet. It carries more than 400 flower buds. Some of the flowers began to expand at the latter part of July, and the plant appears likely to continue to bloom for some weeks. The seeds were received from India, and were sown in rich soil in November, 1905; they were given a mild bottom heat to encourage quick germination, being afterwards transferred into 5-inch pots. Subsequently they were hardened off and planted out in strong loamy soil in their present position. I think there will be no difficulty in getting the flowers to set, as the bees are at work on them all day long. The best position for such a plant is in the sub-tropical or wild garden. Rabbits would not interfere with them, as the spines are very sharp. The foliage is attractive, being of a lightish colour and woolly on both surfaces; the flowers are purple. T. W. Birkinshaw. [An illustration of this species was published in the *Gardeners' Chronicle*, September 16, 1905, p. 219.—Ed.]

THE BUNCH PEAS.—Whilst this so-called Mummy Pea owes much of the interest which is attached to it, to the romantic stories told concerning its association with mummies, and to its odd appearance as compared with normal edible Peas, yet it has some charm of its own. I saw it recently in a cottage front garden at Lingfield, Surrey, where plants some 4 feet in height, carrying large heads or bunches of flowers, were quite charming objects. The flowers resembled those of the old variety Painted Lady, and were red and white. I have thought if some of our expert hybridisers in Sweet Peas would turn their attention to such species as this Bunch Pea, and to the better known twin-flowered Lathyrus, they might raise some hybrids that would possess features hitherto unknown in the Lathyrus family. If this Bunch Pea, for instance, could by hybridisation be induced to materially shorten its stout and somewhat fasciated stem, and to assume a more branching habit, a very pretty garden plant might be obtained. Again, if it were possible to have some of the variety, sweetness, and beauty of *Lathyrus odoratus* in *Lathyrus grandiflorus*, what a remarkable race of perennial Peas might follow. Can anyone tell us of the native habitat, species, and origin of this Bunch Pea? I have looked in vain for mention of it in *Vilmorin's Vegetable Garden*, but presumably it is well known at Kew. Also could we be informed as to how the "Mummy" legend first grew up? A. D.

[In the *Gardeners' Chronicle* for August 14, 1847, p. 542, appeared a note from a correspondent who had purchased from a Mr. Grimstone a sealed packet containing five seeds of the Mummy or Crown Pea, for which he paid five shillings. The plant was first figured in these pages on January 11, 1873, pp. 44-45, and in connection therewith a note by the late Mr. Barron was published. The origin of the Crown Pea was declared to be unknown, but it was described as possessing the following synonyms:—Bunch Pea, Cluster Pea, Mummy Pea, Royal Belshazzar, Pois Couronné, Pois Turc, and Pois Paquet; probably also Grimstone's Egyptian Pea. It was also said to be a distinct variety of the common garden Pea (*Pisum sativum*). In Nicholson's *Dictionary of Gardening*, the Crown Pea is described as a variety of *P. umbellatum*,

and in the *Index Kewensis* *P. umbellatum* is described as synonymous with *P. sativum*. At Kew, however, the Crown Pea has been found to be a variety of *P. elatius*. The following is a quotation from the *Kew Bulletin* for 1894, p. 371:—"Mummy Pea.—A very curious Pea, of which the Director obtained seeds from Messrs. Thomas Sutton, of Eastbourne (who stated that it had been brought from Egypt by the Hon. Charlotte Ellis), under the above name, has flowered at Kew this summer. . . . The seeds much resemble those of the wild *Pisum elatius* of the Mediterranean region. Similar fasciated forms of the Pea are figured by Tabernaemontanus in his *Herbal*, published in the year 1590, on page 495, and are described by Philip Miller in the eighth edition of his *Gardeners' Dictionary* (1771), under the name of *Pisum umbellatum*, Rose or Crown Pea. The native country of *Pisum sativum* and *P. arvense* has never been satisfactorily ascertained. It is not unlikely that they may be both cultivated races derived from *P. elatius*, which extends in a wild state from France to Western Asia. The name 'Mummy Pea' is equally applied to the non-fasciated form. (See *Garden*, 1894, Vol. II., p. 118.)" Mr J. G. Baker has obligingly written us confirming the opinion expressed in the *Kew Bulletin* that it is a variety of *P. elatius*.—ED.]

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

AUGUST 8.—*Present*: E. A. Bowles, F.E.S., F.L.S. (in the chair); Messrs. C. Shea, W. Cuthbertson, J. T. Bennett-Poe, J. Douglas, E. M. Holmes, and F. J. Chittenden (hon. sec). Visitor, Mr. C. E. Grosvenor, of Berkeley, California, U.S.A.

Chlorosis in fruit trees.—MR. SPENCER PICKERING, F.R.S., wrote as follows regarding this subject, which was before the committee at their last meeting:—"In one district where the trouble is very prevalent the soil contains as much as ten per cent. of lime. Deficiency of lime, therefore, cannot be the cause of the disease."

"Yellow Stripe" in Narcissus.—Some bulbs of Sir Watkin Narcissus were received, the foliage and flowers having been affected with the well-known "yellow stripe." The cause of this disease is still obscure, but it appears to follow from too heavily manuring the soil in which the plants are grown. Mr. BENNETT-POE and Mr. DOUGLAS stated that if the plants were cultivated in soil not manured for a time they would recover, but only after a considerable period, and the attempt to cure the plants was hardly worth while in the cheaper varieties.

Curious growth on Broom.—MR. HOLMES showed a branch of Broom which had been drooping downwards, and had sent out from its tip numerous thin shoots much crowded together and growing almost erect. The parent branch had become thickened just at the point at which the branches had been produced.

Crinum augustum.—A splendid inflorescence with foliage of this *Crinum* was shown by Sir TREVOR LAWRENCE. The plant is figured in *Bot. Mag.* (1823), No. 2397.

Plymouth Strawberry.—MR. CHITTENDEN showed on behalf of Mr. R. Lindsay, a specimen of the Plymouth Strawberry from the gardens of Mr. Fraser, Comely Bank Nurseries, Edinburgh. This curious Strawberry was first described by Tradescant, and is referred to in Johnson's edition of Gerard's *Herbal*; it was figured by John Parkinson. Dr. Masters refers to it in *Vegetable Teratology* as "a kind of Botanical Dodo," as it was not heard of for about a century, but was afterwards discovered again at Bitton in Canon Ellacombe's garden, and by Mr. G. F. Wilson at Wisley.

Peloric Antirrhinum.—MR. CHITTENDEN showed, also from Mr. Lindsay, a specimen of *Antirrhinum* with regular flowers, the peloric condition being complete in all the lower flowers of the spike, while some of the upper flowers were returning to the irregular condition. The peloric condition has now become fixed, but the form cannot be depended upon to come true from seed.

Floral Committee.

TRIAL OF CANNAS AT WISLEY.

JULY 30.—One of the trials at Wisley this season in which the Floral Committee is interested is that of Cannas. In one of the large span-roofed houses, having two divisions, there are nearly 500 plants under cultivation, and these represent about 200 varieties, all of which are new, or, being already well known, are still considered to possess merit equal to the best. Most of the specimens are in pots measuring 10 inches in diameter, some are larger, others rather smaller. The cultivation could not be better, each specimen being sturdy in growth, of perfect development in respect to foliage and flowers, and free from any trace of disease or pest. The varieties presented for inspection are, therefore, to be seen in the very best condition possible. Those interested in Cannas, and who have the opportunity, may be recommended to go to Wisley and see the collection for themselves, as the plants will continue in good flower for some time to come. All who see the collection will doubtless be impressed with the evidence it affords of the great improvement that has taken place in Cannas generally. When we remember that in our own experience Cannas were cultivated rather for their handsome foliage than for their flowers, and for the habit that made them suitable plants for associating with other species in what is termed sub-tropical gardening, the present race is the more remarkable. The good habit has not been destroyed, neither has the foliage become less attractive, but the cross-breeder has effected a wonderful improvement in the flowers. The best Cannas are now excellent flowering plants for cultivation in large pots or tubs, or for planting in summer in prominent and sunny positions out-of-doors. They are not so satisfactory out-of-doors, however, except in the most favoured districts. In any case, the plants need the warmest position that can be afforded them, and it is important that they should be sheltered from winds.

The first inspection by a sub-committee took place on July 30, when the following varieties were awarded three marks. No Awards of Merit could be given, because the members present were insufficient to constitute a quorum.

Some of the new varieties were under numbers only, the raiser (Pfizer) being expected to forward the names. Such were "850," with rose-coloured flowers, green foliage, and showy flower truss; "861," with orange-scarlet-coloured flowers, the centre segments being yellow; "1500," a white and cream-coloured variety; "848," crimson; and "874," rose-coloured.

C. "Uncle Sam."—Red or rosy-crimson-flowered variety, the individual blooms being of excellent form. Habit tall.

C. *President Meyer*.—Also an orange-red coloured flower, but with purple, instead of green, foliage. This variety having previously received an award, the award was confirmed.

C. *Burbank*.—A good yellow variety with red spotting, foliage green.

C. *Grössherzog*.—The flowers are orange-scarlet with faint spotting.

C. *Ernest Ludwig*.—A variety which had already received an award, now confirmed.

C. *Oskar Dankerer*.—Previous award confirmed.

C. *Pluto*.—This yellow variety had previously received three marks.

C. *Wyoming*.—An excellently-formed flower of orange yellow colour, tinted like a well-coloured Apricot fruit. The plant was 3 feet high, and the foliage purple.

AUGUST 13.—The second inspection took place on Tuesday last, when the following members of the Floral Committee were present at Wisley:—W. Marshall, Esq., chairman; and Messrs. George Nicholson, James Douglas, W. Bain, C. T. Druery, J. Jennings, James Hudson, T. W. Turner and R. Hooper Pearson.

Awards of Merit were made to the following varieties:—

C. *J. B. van der Schoot*.—A clear yellow flower with red splashes and spots. The form of the individual flowers is not of the best, but the variety has a large, bold spike of many

flowers, and the variety is one of the best decorative plants.

C. Elizabeth Hoss.—Also a yellow variety, with bright red spotting and green foliage. Previous Award of Merit confirmed.

C. Gladiator.—The best spotted variety in the collection. The ground colour is yellow, and the spots red, but the particular feature of the flower is the rich red-coloured segments in the centre. The foliage is green.

C. W. Saunders.—A good rosy-crimson variety with purple foliage.

C. William Bofinger.—The flowers are orange-scarlet, and the foliage green.

C. Uncle Sam.—The award of three marks, made at the earlier inspection, was raised to an Award of Merit.

The following varieties were under numbers only:—"850," the award of three marks was raised to an Award of Merit. "626," flowers orange-red, foliage purple. "1506," a

award was also made to Albatross (white) as for an excellent "garden" Pea, being extremely decorative and apparently always three or four-flowered. Also to the variety Mrs. C. Foster, which has an erect, almost fringed standard. The flower is of shades of rose and mauve.

Among the perennial, or shrubby Phloxes, the variety Gruppenkönigin was selected to receive an Award of Merit. The plant is an extra strong grower, and the flowers are pink.

VISIT OF FRUIT COMMITTEE TO WISLEY.

To examine a trial of Melons, conducted this season in one of the long span-roofed houses at Wisley, a sub-committee of no fewer than 12 members of the above committee visited the gardens on Friday, August 9. The members present included Mr. G. Bunyard, chairman, and Messrs. O. Thomas, W. Bates, W. Poupart, G. Woodward, J. Vert, A. M. Allan, H. Parr, A. Dean, J. Jacques, C. Foster, and G. Reynolds.

which is also a white-fleshed Melon. This variety has previously been certificated, and that award was unanimously confirmed. The green-fleshed Melons included the old William Tillery, long since certificated, and it was found to be of so excellent a quality the award in this case was also confirmed. Also Ringleader, not quite ripe, but still excellent; Eastnor Castle, an old variety still sufficiently good as to secure an Award of Merit; Windsor Castle, rich in flavour but not quite ripe; and Advance, new, which also received an Award of Merit. Only three scarlet-fleshed varieties were set aside for a final tasting; of these, Blenheim Orange readily had its previous award confirmed. Sutton's Scarlet proved to be the best of its section; it is of fine flavour, and the variety was unanimously voted a First-Class Certificate. An Award of Merit was granted to the variety Empress, also for its excellent flavour. It is probable that a fine collection of the best fruits from this trial will be staged at the next meeting of the committee at Vincent Square, on the 20th inst., when any kinds not tasted at Wisley will be judged. As to appearance, whilst all the fruits were handsome, special admiration was bestowed upon the fruits of Perfection, and also upon those of Royal Sovereign.

The committee next examined a trial of dwarf French Beans, but no variety called for special notice. Rows of early Potatos were also inspected, there being an extensive collection of this vegetable. Previous awards made to May Queen, Harbinger, and Ideal, all of which varieties were giving good crops and handsome samples of tubers, were confirmed. A very handsome and free-cropping Potato was noticed in the Colleen, an Irish variety, and this the committee selected for a cooking test at an early date. Others selected were the very handsome, free-cropping, red Kidney Cardinal, raised at Bedford more than 20 years since, Leonardslee Favourite, and Sutton's Favourite. The old Early Regent was good, and its previous award was confirmed. Sir J. Llewellyn and Midlothian Early gave excellent, clean samples of tubers.

NEWBURY HORTICULTURAL.

AUGUST 5.—The 59th annual exhibition of the above society was held in Goldwell's Park on this date. The park is an ideal spot for the holding of a flower show, and the exhibition was visited by a numerous company, including the Mayor and Corporation. The competition this year in many of the classes was exceptionally keen, and rarely has such an array of Grapes been seen. The exhibits of cut flowers and of vegetables were of splendid quality.

GROUPS.

The premier award for a group of greenhouse plants was secured by Mr. J. Howard, gardener to Lady SUTTON, Benham Park, Newbury. 2nd, Mr. F. Lock, gardener to G. J. PLEVIN, Tilebarn, Woodhay. The best exhibit of foliage plants was also shown by Mr. HOWARD, and he had the best groups of exotic Ferns. Mr. C. Ross, gardener to Col. ARCHER-HOUBLON, Welford Park, Newbury, was awarded the 2nd prize for foliage plants.

Fuchsias are a great feature at this show, and those staged on this occasion were splendid examples of good culture. The best plants were 8 feet in height, and were shown by Mr. T. SURMAN. 2nd, Mr. P. Mara, gardener to Lady ARBUTHNOT, Newtown House, Newbury, with smaller plants.

CUT FLOWERS.

Lady SUTTON exhibited magnificent blooms in the Rose classes, and won the 1st prize in an important competition, Messrs. COX and SMITH being 2nd and 3rd respectively. The best Sweet Peas were shown by Mr. Smith, gardener to H. A. EVANS, Esq., Newbury. Mr. G. B. CLARK had the best exhibit of herbaceous flowers.

FRUIT.

Grapes, as previously stated, were very finely shown; indeed, so strong was the competition, that extra awards were given. The premier award for a collection of fruits was secured by Mr. F. Lock. He showed Grapes, Peaches, Nectarines, Melons, &c. 2nd, Mr. G. H. Clark, gardener to Mrs. WATERHOUSE, Yattendon, Newbury. Mr. MARA had the best Black Hamburg Grapes; Mr. TAYLOR, the best of any other black variety. Mr. LEES won in the class for



FIG. 52.—A POT-PLANT OF BLACK ALICANTE GRAPE TWO YEARS OLD. Exhibited by Messrs. J. Veitch & Sons, at the R.H.S. meeting (see p. 117).

very dwarf plant with rose-coloured flowers and purple foliage. "848" (the best crimson variety), three marks, now raised to Award of Merit; and "1500," previous award raised to an Award of Merit.

A variety that narrowly failed to get an award was "Duke of York," a fine magenta-coloured flower, with a narrow yellow band on the margin of each segment—a Picotee type of flower. This variety deserves high recommendation.

SWEET PEAS AND PHLOX.

At the two inspections noticed above the Sweet Peas and Phloxes were examined. It was decided to bracket the following varieties of Sweet Peas as being too much alike:—Paradise, Enchantress, and Florence Spencer. Brilliant Blue and Lord Nelson were also bracketed, and three marks awarded the variety. A similar

There were 26 plants, and each was carrying either three or four finely finished fruits, the majority having the latter number. The committee expressed in warm terms their high appreciation of the culture seen in connection with the trial. The seeds were all sown on the same date in the middle of May. The committee first inspected the varieties, and noted their cropping and other qualities. The ripest fruits only were gathered and tasted. They were then put into their respective sections of scarlet, green, and white flesh, those showing good quality only being thus reserved. A third tasting took place, with the result that the richest flavoured fruit of all was declared to be the white-fleshed Diamond Jubilee. A First-Class Certificate was unanimously awarded this variety. Diamond Jubilee was closely followed in point of quality by the variety Countess,

Muscats, and Mr. G. H. CLACK in that for Madresfield Court. Messrs. LOCK and HOWARD were the principal winners in the other classes for fruit.

VEGETABLES.

Messrs. Sutton, Reading, offered prizes for a collection of vegetables, and the class was splendidly contested. Mr. J. HOWARD surpassed all other competitors in his Magnum Bonum Cauliflowers, Ailsa Craig Onions, Best of All Peas, Al Tomatos, New Intermediate Carrots, and Factor Potatoes. 2nd, Mr. T. SURMAN.

There was great competition in the amateurs' and cottagers' classes for vegetables, and some splendid produce was seen.

MIDLAND CARNATION AND PICOTEE.

AUGUST 8 AND 9.—Owing to the very late season, the annual show of this society, which is always held in the Botanical Gardens, Edgbaston, Birmingham, was postponed from July 31 and August 1 to the above dates. Notwithstanding the alteration, the season proved too early for some exhibitors. The show was an exceedingly good one, both as regards the quality and quantity of exhibits. The old-fashioned florist's method of showing Carnations in paper collars still finds supporters, but the undressed flowers shown as grown, with their own foliage, are gaining favour with the public, and, judging from the increased number of entries in the classes provided for them at Birmingham, exhibitors are increasingly availing themselves of this manner of displaying their flowers. The

man were of perfect shape, size, and finish. 2nd, Mr. C. F. THURSTAN, Wolverhampton, with excellent examples of Daffodil. Mrs. Eric Hambro, Sir Bevy's, Mrs. Flight, &c. 3rd, Mr. R. G. RUDD, King's Norton.

Yellow-ground Picotees.—In this class, for 12 yellow-ground Picotees, Mr. HAYWARD MATHIAS, Medstead, was the winner. His blooms were large and shapely, especially those of Togo, Mrs. W. Heriot, Gamma, Chryseis, and Lauzum. 2nd, Mr. C. F. THURSTAN.

Fancy Carnations.—In a class for 12 Fancy Carnations, Mr. C. F. THURSTAN beat six competitors with flowers of surprising merit. The varieties were Elaine, Douce Davie, Merlin, Sam Weller, Margaret Thurstan, Highfield Lass, King Solomon, King Solomon (sport), R. A. Rowberry, Galileo, Canatrice, and Hanno. 2nd, Mr. A. R. BROWN.

White-ground Picotees.—In the classes for 12 white-ground Picotees and 12 Flakes or Bizarres, Mr. C. H. HERBERT, Acocks Green, won both 1st prizes with refined flowers. Mr. A. R. BROWN and Mr. C. F. THURSTAN won the 2nd prizes.

Self Carnations.—In the class for six Self Carnations, Mr. G. D. FORD, Acocks Green, beat 16 other competitors with a stand of superb flowers of Bridegroom, Sir Galahad, Sir Bevy's, Mrs. M. V. Charrington, Glowworm, and Mrs. Eric Hambro. 2nd, Mr. G. F. SPITTLE, Solihull.

In the small classes provided for yellow-ground Picotees and Fancy Carnations, the

being of the highest quality. 2nd, Rev. C. A. GOTTWALTZ. 3rd, Mr. G. D. FORD.

Mr. JAMES FAIRLIE, Acton, won in the class for six Flakes or Bizarres. 2nd, Dr. A. H. BEADLES, Sydenham.

UNDRESSED FLOWERS.

Self Carnations. In the class for 12 dissimilar varieties, the exhibits in which were dis-



FIG. 54.—GOOSEBERRY LORD DERBY TRAINED AS A TRIPLE CORDON.

Exhibited by Messrs. J. Veitch & Sons (see p. 117).

played in vases on tier staging, occupying an area of 24 inches by 20 inches, there were six contestants. The schedule required that no wire be used, except a mere support, which must not come beyond the base of the calyx. Mr. W. H. PARTON was placed 1st with handsome specimens of Daffodil, Sir Bevy's, Britannia, Bridegroom, Sappho, W. H. Parton, Sir Galahad, Lady Hermione, Hildegard, Helen, The Sirdar, and Cassandra. 2nd, Mr. A. R. BROWN. 3rd, Mr. R. G. RUDD.

Mr. W. H. PARTON also gained the premier position in a class for 12 Fancy or yellow-ground Carnations of dissimilar varieties. 2nd, Mr. A. W. JONES, and 3rd, Mr. A. R. BROWN.

In a similar but smaller class to the last-named, Mr. H. SKEELS, Walsall, beat the Rev. C. A. GOTTWALTZ. There were 10 exhibits in this class.

In the class for six Self Carnation flowers, the 1st prize was awarded to Mr. G. D. FORD, whose flowers, with the exception of Sir Galahad, were in splendid condition. 2nd, Mr. J. D. WILLIAMS, Smethwick.

FLOWERS SHOWN IN TREBLES.

Treble Selfs, yellow-ground Picotees, or Fancies, dissimilar.—Of the six competitors in



FIG. 53.—PALMATE-TRAINED PLANT OF GOOSEBERRY LANGLEY BEAUTY.

Exhibited by Messrs. J. Veitch & Sons at the last meeting of the R.H.S. (see p. 117).

weather was fine on both days of the show, which was well supported by members and the public.

DRESSED FLOWERS ON STANDS

Self Carnations.—The best 12 varieties in the premier class for Self Carnations came from Mr. A. R. BROWN, King's Norton, whose flowers of Cecilia, W. H. Parton, Ensign, Comus, W. Brearley, Helen Gottwaltz, and Cardinal Wise-

Rev. C. A. GOTTWALTZ, Hadzor, Droitwich, won the premier prize with exquisite flowers. Mr. A. W. JONES won the 2nd prize in the first, and Mr. G. D. FORD the second in the last-named class.

White-ground Treble.—In the class for six flowers, the best among 12 exhibits was shown by Mr. F. W. GOODFELLOW, Walsall, who showed very handsome flowers, every specimen

this important class, Mr. W. H. PARTON gained the 1st prize with magnificent flowers of Sappho, Voltaire, R. A. Rowberry, Ivo Sebright, Gronow, Sir Galahad, King Solomon, Lucifer, Merlin, W. H. Parton, Hildegard, and Galileo. 2nd, Mr. R. G. RUDD, with beautiful flowers of fresh appearance, but they were not so effectively staged as those of the 1st prize collection. 3rd, Mr. A. R. BROWN.

In the similar but smaller class for six flowers, Mr. J. D. WILLIAMS was awarded the 1st prize for an excellent stand of flowers containing Merlin, Ivo Sebright, Mrs. Walter Heriot, &c. 2nd, Mr. G. D. FORD. 3rd, Mr. C. CHATWIN, Handsworth.

White Carnations.—Mr. A. W. JONES staged the best vase of white Carnations (Sir Galahad), and he also showed the winning vase of a rose, salmon, or a scarlet-coloured variety in Glowworm, and the best vase of a yellow or buff-ground Fancy variety in Sam Weller.

Mr. C. H. HERBERT won the 2nd prizes in the first and last-named classes, and Mr. A. R. BROWN secured the second prize in the other class.

The best vase of a yellow Carnation (Daffodil), dark Self (W. H. Parton), and the best of a yellow-ground Picotee (Mrs. W. Heriot) came from Mr. W. H. PARTON.

AMATEUR SECTION.

Five classes were reserved for amateurs who do not cultivate more than 300 plants, and who do not employ a gardener continuously. All the classes in this section were keenly contested, and the flowers were of excellent quality.

Mr. E. J. PRICE, Bournbrook, won the Bronze Medal and four other prizes.

AWARDS.

First-Class Certificates were awarded to:—*Fair Maiden*, a light scarlet-edged Picotee from Mr. F. W. FLIGHT, Cornstiles, Twyford. *Togo*, a heavy red-edged Picotee, from Mr. H. MATHIAS, Medstead. *Carrie Goodfellow*, a heavy scarlet-edged Picotee, from Mr. F. W. GOODFELLOW, Walsall. *Acc of Trumps*, a yellow-ground Picotee, from Mr. A. W. JONES, Stechford. *Lady Douglas Galton*, a yellow-ground Picotee; *Maud Brown*, a white-ground Picotee, from Rev. C. A. GOTTWALTZ, Hadzor.

AWARD OF MERIT.

Queen of the Whites, a Tree Carnation, from Messrs. R. F. FELTON & SONS, London.

PREMIER FLOWERS (DRESSED).

Bizarre Carnation "Master Fred," shown by Mr. C. H. HERBERT; Flake Carnation "Sportsman," shown by Mr. C. H. HERBERT; heavy edge, white-ground Picotee "Mrs. Hoskier," shown by Mr. F. W. GOODFELLOW; light or wire edge, white-ground Picotee "Fair Maiden," shown by Mr. HAYWARD MATHIAS; heavy edge, yellow-ground Picotee "Togo," shown by Mr. H. MATHIAS; light edge, yellow-ground Picotee "Lady Douglas Galton," shown by Mr. A. R. BROWN; yellow-ground fancy Carnation, "Elaine," shown by Mr. C. F. THURSTAN; Self Carnation "Mrs. Eric Hambro," shown by Rev. C. A. GOTTWALTZ.

PREMIER FLOWERS (UNDRESSED).

Self Carnation "Cantor," shown by Mr. H. SKEELS; fancy Carnation "King Solomon," shown by Mr. W. H. PARTON; yellow-ground Picotee "Mrs. Walter Heriot," shown by Mr. Mr. W. H. PARTON.

SPECIAL MEDALS AND PRIZES.—Four medals were offered by the BIRMINGHAM BOTANICAL AND HORTICULTURAL SOCIETY to the exhibitors gaining the greatest number of points in certain classes. The Silver Champion Medal was won by Mr. A. R. BROWN with 149 points in the large and single-bloom classes. Mr. C. H. HERBERT secured the Bronze Medal in the same classes.

The Rev. C. A. GOTTWALTZ (with 82 points) won the Silver Medal in the small and single-bloom classes, the Bronze Medal being awarded to Mr. G. D. FORD. The CARNATION SOCIETY'S Silver Medal, offered to the most successful exhibitor in the single-bloom classes, was taken by Mr. R. BROWN, who also secured a copy of Baines' *Stove and Greenhouse Plants*, and a copy of Hobday's *Villa Gardening* as the most suc-

cessful, all-round exhibitor. Mr. E. J. PRICE received the Bronze Medal and a copy of Hobday's *Villa Gardening* as the most successful exhibitor in the Amateur Classes. Mr. W. H. PARTON was the winner of a copy of Hobday's *Villa Gardening* in the undressed flowers. The four books were presented by Mr. WILLIAM ROBINSON.

Liberal prizes were offered by Mr. ROBERT SYDENHAM for Sweet Peas, and the principal prize-winners in these classes were: Mr. T. JONES, Ruabon; Mr. R. BARNES, Lichfield; Mr. E. DEAKIN, Hay Mills; and Mr. A. E. BUTLER, Edgbaston.

HONORARY EXHIBITS.

The non-competitive exhibits were much admired, and gave additional interest to the show.

Messrs. BAKERS, Wolverhampton, had a large assortment of hardy flowers, consisting principally of Phloxes, Liliums, Spiræas, Gladiolus, and Roses. (Silver-Gilt Medal.)

The space in front of the orchestra was furnished by Messrs. R. F. FELTON & SONS, London, with Carnations arranged in tall stands; also Richardias and pink, scarlet, and white Verbenas. (Silver Medal.)

Messrs. HEWITT & Co., Solihull, staged a large and interesting collection of hardy herbaceous flowers and sprays of hardy-flowering shrubs. (Silver Medal.)

Mr. A. F. DUTTON, Iver, Bucks., contributed a handsome group of cut Carnations in variety. (Silver Medal.)

Messrs. BLACKMORE & LANGDON, Bath, displayed a prettily-arranged group of double Begonias, including shapely flowers of Mrs. Portman Dalton, Professor Lanciana, Rt. Hon. Joseph Chamberlain, and Mrs. Booth. (Bronze Medal.)

Messrs. DAVIS & SONS, Yeovil, also showed a collection of cut Begonias. (Bronze Medal.)

Mr. W. SYDENHAM, Tamworth, contributed a well-arranged group of hardy flowers, in which were some very fine Carnations. (Bronze Medal.)

Messrs. RANDALL & SONS, Shirley, exhibited American varieties of Carnations and Liliums. (Bronze Medal.)

Messrs. DICKSONS, Chester, staged a large group of hardy flowers, in which were Phlox Eugene Danzanvilliers, Romneya Coulteri, Liliums, and Roses. (Bronze Medal.)

Messrs. GUNN & SONS, Olton, staged Roses in variety, and a choice collection of Phloxes. (Silver Medal.)

Messrs. W. H. SIMPSON & SONS, Birmingham, sent a beautifully-arranged group of Sweet Peas. (Bronze Medal.)

ROYAL BOTANIC.

AUGUST 12.—The annual meeting was held on the above date in the society's gardens, Regent's Park. Mr. Pembroke Stephens, K.C., presided. In the 68th annual report the council stated that the society's indebtedness had decreased during the year from £34,402 to £33,374, and the debentures from £28,700 to £27,500. That Fellows of the society believed in it to the extent of £27,000 was a fact which spoke for itself as evidence of confidence in its management and in its future. A policy of redemption as to £6,000 of the debentures had been taken out, the surrender value being £235 in 1905 and £360 in 1906, the increase of £125 being also an increase in the society's assets. Subscriptions had amounted to £2,544 in 1905 and £2,551 in 1906. The amount received from fetes, exhibitions, and garden-parties had been £1,516 in 1905 and £1,525 in 1906. The society's scientific work had been carried on with consistent regularity and efficiency. The number of Fellows and others had fallen from 1,834 to 1,723. Nearly half the decrease was accounted for by deaths. The attempts to shake public confidence in the society had reached their climax during the year, but there had been ample evidence that a majority of the Fellows wished to place the income on a firmer footing. The council were anxious to adopt any well-considered proposals to improve the upkeep and usefulness of the gardens, but they were bound to resist repeated attacks based upon misconceptions or misrepresentations.

The chairman said that the gardens were, so far as they knew, the prettiest gardens of the kind in or out of London, and were kept up by the Fellows without any public grant for rates or rent. The society was ancient, Royal, and chartered, it was

doing an excellent work, and every visitor was pleased with the gardens, which were easy of access. The council had done all that was possible to investigate every ground of complaint. Looked at all round, he believed there was a very substantial advance in the society's position, and he hoped the Fellows would continue to support the council.

Sir Edwin Galsworthy seconded the adoption of the report. The opposition, he said, appeared to have dwindled from three to nothing. The council comprised men of business experience, and he felt that the antagonistic section of Fellows would not do the society any real good. The matter of the debentures had been put before them in a very misleading manner by certain Fellows, and the money certainly would not be pressed for if the agitation ceased. The increased subscription proposed by the council would have enabled them to pay off all the debentures in time.

The Duke of Teck was re-elected president, Mr. C. Brinsley Marlay was elected treasurer, and the eight retiring members of the council were re-elected.

The chairman said he recognised that there existed a feeling that the agitation had done some good; on the other hand, they had the falling off in the number of Fellows. They could draw a useful conclusion from this. An extra guinea subscription would extinguish in time the whole of the debentures, or the debenture-holders could hand them back to the society.

The report was adopted, five dissenting.

It was decided to send a vote of congratulation to Sir Joseph Hooker, who had been since 1873 an honorary member of the society, on his attaining the age of 90 years.

COMMONS AND FOOTPATHS PRESERVATION.

AUGUST 1.—Lord Eversley presided over the monthly meeting of the executive committee of the Commons and Footpaths Preservation Society, held on the above date, at 25, Victoria Street, Westminster. It was reported that the progress of the society's Public Rights of Way (No. 2) Bill continued to be opposed by a single member of Parliament, although the Bill had received the hearty support of leading representatives of all political parties, and was generally regarded as a non-controversial measure. It was resolved, upon the motion of Lord Eversley, seconded by Sir Robert Hunter:—

"That this society, being greatly impressed by the great benefits which would flow from the passing into law of the Rights of Way (No. 2) Bill and the Advertisements Regulation Bill, benefits which would operate, especially in rural districts, by preserving those field paths which are so largely used by the labouring population, and preventing the disfigurement of the countryside, and hearing that the Advertisements Regulation Bill has passed through all its stages in both Houses, and only requires the consent of the House of Commons to amendments made at the instance of the promoters in the House of Lords, while the Rights of Way Bill passed through the Grand Committee with the warm approval of members of all parties, earnestly begs the Prime Minister to give those advantages in procedure to both measures which at this period of the Session are necessary to enable the Bills to be considered on their own merits."

A communication was read from Mr. Haldane, M.P., the Secretary of State for War, stating that the War Office, after considering the report of the society's solicitor, Mr. Percival Birkett, upon the legal position of Eltham Common, had decided to abandon its proposal to erect officers' quarters upon the common. Exhaustive researches have been made into the history of Eltham Common, and the society is satisfied that although no rights of common have been exercised for some time, freehold tenements exist in respect of which such rights are appendant. Much satisfaction was expressed by the society at the decision of the War Office not to proceed with the threatened enclosure of part of a valuable Metropolitan common, and it was decided to urge the Department to give its consent to a scheme for the regulation of the land under the Metropolitan Commons Acts, on the understanding that the power to use the land for military purposes was reserved. It was also reported that the Birkenhead Corporation had agreed to the insertion of a clause in their Water Bill, now before Parliament, limiting their powers of acquisition to an easement only over common land in the County of Denbigh, to be utilised for reservoirs and pipes. The secretary, Mr. Lawrence W. Chubb, stated that during July upwards of 50 fresh cases of interference with footpaths and commons had been referred to the society for advice and assistance.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JULY 25.—Committee present: E. Ashworth, Esq. (Chairman), and Messrs. Warburton, Ward, Cowan, Keeling, Parker, P. Smith and Weathers (hon. sec.).

A. Warburton, Esq., Haslingden (gr. Mr. Dalgleish), exhibited a group of plants, principally Odontoglossums, which were in great variety. (Bronze Medal.)

W. Thompson, Esq., Stone, Staffs. (gr. Mr. Stevens), exhibited a group of Cypripediums, principally hybrids. (Bronze Medal.)

Messrs. KEELING & SONS, Westgate Hill, Bradford, staged a group of miscellaneous plants. Some pleasing forms of Masdevallia were included in the exhibit, also a well-developed plant of Chondrorhyncha Chestertonii. (Bronze Medal.)

Mr. J. E. SADLER, Newbury, Berks, staged a dozen or more plants of Odontoglossums in variety. (Bronze Medal.)

J. MACARTNEY, Esq., Bolton, displayed a few good Cypripediums, as did also Mr. W. BOLTON, of Warrington.

AWARDS OF MERIT.

Chondrorhyncha Chestertonii and Cypripedium Elliottianum var. superbum shown by Messrs. A. J. KEELING & SONS.

Cypripedium Curtisii var. splendens displayed by W. THOMPSON, Esq., and C. X. Donald from the gardens of J. MACARTNEY, Esq., P. W.

THE SHREWSBURY SHOW.—We have received from Mr. W. W. NAUNTON, one of the honorary secretaries of the Shropshire Horticultural Society, an album of photographic views of some of the features of the horticultural shows which have been held in the old Shropshire town. All the illustrations in this *Souvenir of Shrewsbury Great Floral Fête* are excellent reproductions on art paper of photographs taken by Mr. NAUNTON himself, whose successful amateur photography is so well known to visitors to Shrewsbury. The illustrations include "A General View of Shrewsbury from St. Chad's Tower," "Champion Grapes," "The Champion Grape Vase, value £52 10s.," "Fruit Exhibit," "Collection of Vegetables," "Exhibit of Sweet Peas," and 20 other views connected with the fêtes, the Quarry grounds, and interesting features of the town. It is published at the low price of 3d., and may be obtained from Messrs. ADNITT & NAUNTON, The Square, Shrewsbury. Visitors to the town next week are recommended to procure copies of this well-executed little pamphlet, which contains, in addition to the illustrations, particulars of the charitable work that has been accomplished by the Shropshire Horticultural Society.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending August 14.

Day temperatures remarkably uniform.—Throughout the past week the maximum readings in the thermometer screen have been remarkably uniform, the lowest being 68° and the highest 71°, or a variation of only 3°. The nights were all more or less warm, and on the warmest of them the exposed thermometer did not fall below 57°—making this the warmest night as yet recorded here during the present year. Owing to the paucity of sunshine the ground still remains cold for the time of year, the reading at 2 feet deep being 29° colder, and at 1 foot deep 1° colder, than is reasonable. Rain fell on only two days, and to the aggregate depth of less than a quarter of an inch. No rain water at all has come through the percolation gauge on which short grass is growing, during the week, while only a few drops have trickled each day through the bare soil gauge. The sun shone on an average for 4½ hours a day, or for nearly 14 hours a day in defect of its usual duration in August. The winds were, as a rule, high, but in no hour did the mean velocity exceed 14 miles, direction W.N.W. The mean amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by as much as 12 per cent. E. M., Berkhamsted, August 14, 1907.

CATALOGUES RECEIVED.

BULB LISTS.

SWART & Co., 6, Melbourne Place, Edinburgh.
FISHER, SON & STRAY, LTD., Handsworth, Sheffield.
CLIBRANS, Manchester and Altrincham.
THOS. DAVIES & Co., Wavertree, Liverpool.
LITTLE & BALLANTYNE, Carlisle.
COOPER, TABER & Co., LTD., 90 & 92, Southwark Street, London, S.E. (Wholesale).
JAMES VEITCH & SONS, LTD., King's Road, Chelsea.
WM. CUTBUSH & SON, Highgate, London, N.
JOHN PEED & SON, West Norwood, London, S.E.

MARKETS.

COVENT GARDEN, August 14.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally several times in one day.—ED.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Alstromerias, per dozen bunches	2 0-4 0		Lilium longiflorum	2 0-3 0	
Asters, per dozen bunches	3 0-4 0		Lily of the Valley, p. dz. bunches	4 0-6 0	
Bouvardia, per dz. bunches	4 0-6 0		— extra quality	8 0-12 0	
Calla æthiopica, p. dozen	2 0-3 0		Marguerites, white, p. dz. bunches	2 0-3 0	
Carnations, per dozen blooms, best American various	1 6-3 0		— yellow, per dz. bunches	1 6-2 0	
— smaller, per doz. bunches	9 0-12 0		Mignonette, per dz. bunches	2 0-3 0	
— Malmays, p. dozen blooms	6 0-10 0		Odontoglossum crispum, per dozen blooms	2 6-3 0	
Cattleyas, per doz. blooms	12 0-15 0		Pancratiums, per dozen fls.	8 0-4 0	
Chrysanthemum maximum, per dozen bunches	1 0-2 0		Pelargoniums, show, per doz. bunches	4 0-6 0	
— best blooms, p. dozen	2 0-2 6		— Zonal, double scarlet	4 0-6 0	
— small, per doz. bunches	3 0-4 0		Poppies, Iceland, doz. bunches	4 0-8 0	
Coreopsis, per doz. bunches	2 0-3 0		— Shirley	2 0-3 0	
Cornflower, per dz. bunches	1 0-2 0		Pyrethrums, per dozen bunches	2 0-4 0	
Dahlias, per dozen bunches	3 0-4 0		Rhodanthe, per dz. bunches	3 0-4 0	
Eucharis grandiflora, per doz. blooms	2 0-3 0		Roses, 12 blooms, Niphetos	1 0-3 0	
Gaillardias, per dz. bunches	2 0-3 0		— Bridesmaid	2 0-3 0	
Gardenias, per doz. blooms	2 0-3 0		— C. Testum	2 0-3 0	
Glaucolus, The Bride, per doz. bunches	3 0-5 0		— General Jacqueminot, per doz. bunches	1 0-2 0	
— Brechleyensis	3 0-5 0		— Marshal Niel	1 6-3 0	
— various	1 0-9 0		— Kaiserin A. Victoria	1 6-3 0	
Gypsophila elegans p. dz. bunches	2 0-3 0		— Mrs. J. Lang	1 0-3 0	
— paniculata, per dozen bunches	2 0-3 0		— C. Mermet	1 0-3 0	
Iris, German, per doz. bunches	4 0-6 0		— Liberty	2 0-4 0	
— Spanish, p. dz. bunches	4 0-9 0		— Mad Chateaux	1 0-3 0	
Lapageria all. p. doz. bunches	1 0-1 6		Saponaria, per dz. bunches	1 6-2 0	
Lilium auratum	2 0-3 0		Scabious, per doz. bunches	3 0-4 0	
— lancifolium, rubrum and album	1 6-2 0		Statice, per dozen bunches	2 6-3 0	
			Stephanotis, per dozen trusses	3 0-5 0	
			Stocks, per dozen bunches	3 0-4 0	
			Sweet Peas, p. doz. bunches	1 0-3 0	
			Sweet Sultan, per dozen bunches	3 0-4 0	
			Tuberose, per dz. blooms	0 4-0 6	

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Adiantum cuneatum, per dozen bunches	4 0-6 0		Galax leaves, per dozen bunches	2 0-2 6	
Asparagus plumosus, long trails, per doz. bunch	8 0-12 0		Hardy foliage (various), per dozen bunches	2 0-6 0	
— medium, bunch	1 6-2 0		Ivy-leaves, bronze, long trails per bundle	1 6-3 0	
— Sprengeri	0 6-1 0		— short green, short bunches	2 0-3 0	
Berberis, per doz. bunches	2 0-2 6		Moss, per gross	4 0-5 0	
Croton leaves, bch.	1 0-1 6		Myrtle (English), small-leaved, doz. bunches	4 0-6 0	
Cycas leaves, each Fern, English, per dozen bunches	1 0-2 0		— French, dozen bunches	1 0-1 6	
— French, dozen bunches	1 0-3 0		Smilax, p. dz. trails	1 6-2 6	

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Ampelopsis Veitchii, per dozen	6 0-8 0		Cyperus alternifolius, dozen	4 0-5 0	
Araha Sieboldii, dz.	4 0-6 0		— laxus, per doz.	4 0-5 0	
— larger	9 0-12 0		Dracenas, per doz.	9 0-24 0	
Araucaria excelsa, per dozen	12 0-30 0		Eunymus, per dz.	4 0-9 0	
Aspidistras, green, per dozen	18 0-30 0		Ferns, in thumbs, per 100	7 0-10 0	
— variegated, dz.	30 0-42 0		— in small and large 60's	12 0-20 0	
Asparagus plumosus nanus, doz.	9 0-12 0		— in 48's, per dz.	4 0-10 0	
— Sprengeri, doz.	9 0-12 0		— in 32's, per dz.	10 0-18 0	
— ten-riusimus, per dozen	9 0-12 0		Ficus elastica, per dozen	8 0-10 0	
Asters, per doz.	3 0-6 0		— repens, per doz.	4 0-6 0	
Calceolarias, yellow	4 0-8 0		Fuchsias, per doz.	4 0-6 0	
Campanulas, p. dz.	6 0-9 0		Heliotropiums, per dozen	3 0-4 0	
Chrysanthemums, per dozen	4 0-8 0		Hydrangea Hortensia, per dz.	8 0-12 0	
Clematis, per doz.	8 0-9 0		— paniculata, per dozen	9 0-18 0	
— in flower	12 0-18 0		Kentia, Belmoreana, per dozen	12 0-18 0	
Cocos Weddelliana, per dozen	9 0-18 0		— Fosteriana, dz.	12 0-21 0	
Coleus, per dozen	2 0-4 0		Kochia scoparia, per dozen	6 0-9 0	
Coreopsis, per doz.	6 0-10 0		Lantana borbonica, per dozen	12 0-18 0	
Crassulas (Kalos-anthes), per dz.	9 0-12 0				
Crotons, per dozen	12 0-30 0				

Plants in Pots, &c.: Average Wholesale Prices (Contd.).

	s.d.	s.d.		s.d.	s.d.
Lilium longiflorum, per dz.	12 0-24 0		Pelargoniums, — Zonals, per dz.	4 0-6 0	
— lancifolium, per dozen	12 0-18 0		— show	6 0-9 0	
Lily of the Valley, per dozen	10 0-12 0		Petunias, double, per dozen	4 0-8 0	
Marguerites, white, per dozen	4 0-8 0		— single, per dz.	3 0-6 0	
— yellow	12 0-18 0		Rhodanthe, per dz.	4 0-6 0	
Mignonette, per dz.	6 0-9 0		Roses, Ramblers, each	3 0-7 6	
Pelargoniums, Ivy-leaved, Mde. Crousse and Galilee, p. dozen	4 0-6 0		Schizandria, dozen	4 0-6 0	
			Spiraea, per dozen	5 0-8 0	
			Verbena, Miss Willmott, doz.	4 0-6 0	
			Zinnias, per dozen	3 0-4 0	

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples, per box, Tasmanian	5 0		Melons (Valencia), per case	5 6-9 6	
— Sturmer Pippins	12 6-13 6		— Cantaloupe, each	0 3-0 4	
— English, p. bushel	2 6-3 6		Nectarines (English), per doz.	8 0-15 0	
— 1st sieve	1 3-2 6		— 1st quality	8 0-15 0	
Apricots (French), per box	1 2-1 4		— 2nd	2 0-4 0	
— French, cases	2 0-2 6		— French, p. box	0 10-1 0	
— French, 1st sieve	4 0-5 0		Nuts, Cobnuts, per doz. lb.	2 6-3 0	
Bananas, bunch	5 0		— Almonds, bags	54 0	
— No. 1	5 6-6 0		— Brazil, new, per cwt.	40 0-42 6	
— Extra	6 6-7 6		— Barcelona, bag	32 6	
— Gaints	8 0		— Cocoa nuts, 100	12 0-17 0	
— Jamaica	5 0-5 6		Oranges (Austrian), per box	8 0-14 0	
— Loose, per dz.	0 9-1 3		— Natal, per case	6 0-8 0	
Cherries (English), 1st sieve	5 0-9 0		— Naples, p. case	8 0-10 0	
— 2nd sieve	3 0-5 0		— Navels, p. case	10 0-10 6	
Cranberries, case	8 0-8 6		— Murcia, p. box	10 0-14 0	
Currents (English), Red, 1st sieve	2 0-2 6		Peaches (English), per dozen	6 0-9 0	
— Black (English), 1st sieve	6 0-6 6		— 1st quality	6 0-9 0	
— White, p. peck	1 9-2 0		— 2nd	1 0-3 0	
Dates (Tunis), doz. boxes	2 6		— French, p. box	3 1-3 6	
Figs (Guernsey), p. dozen	1 0-4 0		Pears (English), 1st sieve	1 9-2 6	
Gooseberries (English), 1st sieve	1 6-3 0		— French, Williams Bon Cretien, per box	3 6-4 0	
Grape Fruit, case	11 0-12 0		— (California), per box	7 0-8 0	
Grapes (English), Hambro, p. lb.	0 6-1 0		Plums (English), p. 1st sieve	2 3-2 6	
— Abate, per lb.	0 8-1 0		— Orleans	2 0	
— Gros Maroc, per lb.	0 9-1 3		— Morocco	2 0	
— English Muscats, per lb.	0 9-2 6		— Rivers	1 9-2 0	
— Canon Hall, per lb.	2 0-4 0		— Czars	2 0-2 3	
— Belgian Hambro's, per lb.	0 6-0 9		— California, box	6 0-6 3	
Lemons			— French, p. box	0 10-1 0	
— Messina, case	9 0-13 0		— French, 1st sieve	1 6-5 0	
— Naples, p. case	18 0-23 0		— Italian, basket	1 6-1 9	
Lyches, per box	1 0		Gages (French), per box	0 8-1 6	
Mangoes, per doz.	6 0-12 0		— Italian, basket	1 6-1 9	
Mandarins, Natal Nauties, box	1 3-1 9		— French, 1st sieve	2 6-5 0	
— case	6 0-8 0		— Spanish, 1st sieve	10 0-10 6	
Melons (Guernsey), each	0 9-2 0		Pineapples, each	2 0-3 6	
— French, Rock, each	1 6-3 0		Raspberries (English), handle	1 6-1 9	
			— English, p. dz. punnets	3 0-5 0	

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes (French), per dozen	1 0-1 3		Mint, doz. bunches	0 5-1 0	
Aubergines (French), per doz.	1 0-1 3		Mushrooms (house)	0 8-0 10	
Beans (French), per pad	3 0-4 0		— per lb.	0 8-0 10	
— Broad (English), p. bushel	2 0		— buttons, per lb.	0 10	
— Home-grown, per bushel	3 0-3 6		— "Broilers" p. lb.	0 5-0 6	
Beetroot, bushel	1 3 1 6		Mustard and Cress, per dozen pun.	1 0-1 6	
Cabbages, per doz. bunches	0 9-1 0		Onions (Lisbon), case	5 0	
Cabbage Greens, bag	1 0-1 6		— pickling, per bushel	2 0-2 6	
— red, per dozen	2 0		— Spring, pr. dz. bunches	1 6-2 0	
Carrots (English), dozen bunches	1 0 1 6		Peas (English), per bushel	1 6-2 6	
— washed, per bag	3 0-3 6		— English, p. bag	4 0-5 0	
Cauliflowers, per dozen	2 0 2 6		Parsley, 12 bunches	1 6-2 0	
Chow Chow (Sichuan edule), p. dozen	3 0		— 1 bushel	1 0-1 6	
Cucumbers, per dozen	1 6 2 6		Potatoes (Canary), per cwt.	8 0-9 0	
Endive, per dozen bunches	2 6		Radishes (Guernsey), per dozen	0 4-0 6	
Horseradish, foreign, per doz. bunches	13 0 14 0		Salsify, p. dz. bds.	3 6	
Leeks, 12 bundles	1 6		Spinach, English, per bushel	0 9-1 0	
Lettuce (English), Cos, per score	0 4-0 6		Tomatoes:—		
Marrows (English), per tally	3 0-4 0		— French, p. crate	3 0-3 6	
			— selected, per dozen lbs.	3 0-3 6	
			— small selected, per dozen lbs.	2 6-3 0	
			Turnips (English), doz. bunches	2 0-3 0	
			Watercress, per doz. bunches	0 4-0 6	

REMARKS:—Plums from Kent are arriving in large quantities and record consignments are anticipated. English Apples and Pears are also obtainable. Home-grown Tomatoes have made a slight advance in value. The first shipments for this season of Australian Oranges and Californian Lemons ("Golden Drops") have been received. French Gages are much cheaper. Strawberries are now finished. P. L., Covent Garden Market, August 14, 1907.

POTATOES

Kents, 3s. to 4s. per cwt.; Bedford, 60s. to 70s.; Lincolns, 50s. to 70s.; Blacklands, 45s. to 50s. per ton. Supplies are large, but the demand generally is slow. J. D. C., Covent Garden, August 14, 1907.

COVENT GARDEN FLOWER MARKET.

Chrysanthemums of the Madame Massee type, in pots, are seen on several stands, but they are not disbudded and not good in quality. The Egg plant (*Solanum ovigerum*) is sent by several growers, and though not of much decorative value, it sells readily as a novelty. *Campanula isophylla* alba and C. l. Mayi are now very good, including plants with flowers fully expanded, and others with their first blooms just opening. *Verbenas* Miss Willmott, Scarlet King, and the white variety are seen in well-flowered plants. Up to yesterday morning *Pelargoniums*, including show, ivy-leaved, and zonals, were procurable in well-flowered plants. *Fuchsias*, *Heliotropiums*, *Chrysanthemum segetum*, *Hydrangea Hortensia* and *paniculata grandiflora* in various sized plants, *Lilium longifolium* and *L. laucifolium rubrum* are seen on several stands, but they do not sell freely. *Marguerites* are still abundant, especially those with white flowers. *Rose Dorothy Perkins* is still seen, but some of the blooms are far advanced. Plants of *Spiraea japonica* from retarded crowns are well-flowered. Bedding plants are still procurable. Single *Petunias* were noted on three stands on Tuesday (August 13); also small zonal *Pelargoniums*, *Calceolarias*, &c. Of Chinese *Asters* some are in pots and others are plants that have been taken up from the open ground. Trade for Ferns and other foliage plants is now very quiet.

CUT FLOWERS.

The market is overloaded with cut bloom. *Asters* are now very good from home growers; those of the Comet section are favourites. *Statice* of various sorts are over abundant. *Coreopsis*, *Gaillardias*, *Scabiosus caucasicus*, also the ordinary Sweet *Scabiosus*, in very pretty shades of colours; *Roses*, *Carnations*, Sweet Peas, *Gladiolus* and *Liliums* are all over abundant. *Gypsophila paniculata* is seen in heaps all round the market, and I noted some of a new double variety which does not come into bloom quite so early as the type. *Irises* are now over for the season. Sweet Sultan can be had in yellow and white flowers, both are extensively grown; the improved white variety is much appreciated. Iceland *Poppies* are still very good. *Tuberoses*, *Gardenias*, *Stephanotis*, *Lapageria alba*, and *Eucharis* are all well supplied.—A. H., Covent Garden, Wednesday, August 14, 1907.

GARDENING APPOINTMENTS.

Correspondents are requested to write the names of persons and places as legibly as possible. No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting box for the Gardeners' Orphan Fund, it will be thankfully received and acknowledged in these columns.

- Mr. G. A. HOLMES, for four years as Foreman in the gardens of H. WHITWORTH, Esq., Dunford House, Wath-on-Dearne, Rotherham, as Gardener to Colonel ORANGE BROMEHEAD, Newbold House, near Chesterfield. (One shilling has been placed in R.G.O.F. Box.)
- Mr. WILLIAM G. PAYNE, for the past 24 years Gardener to R. PALMER, Esq., Nazing Park, Waltham Cross, as Gardener to WALTER HARGREAVES, Esq., at the same place. (One shilling has been placed in the R.G.O.F. Box.)
- Mr. F. DEANEY, for the past six years Gardener to SIDNEY ROBERTS, Esq., Scotsbridge House, Rickmansworth, as Gardener to Mrs. FULCHER, Redenham House, Andover, Hants. (One shilling has been placed in the R.G.O.F. Box.)
- Mr. WM. GEO. COOMBS, for the past 12 months Gardener to Mrs. PILGRIM, Akeley Wood, Buckingham, and previously 7½ years with Mr. STERRY, Chapel Clewe, Washford, Taunton, as Gardener to Captain TRYON, The Manor House, Great Durnford, Salisbury.
- Mr. F. COOK, for three years Gardener to the late Mrs. ELEY, Oxhey Grange, Watford, Herts, as Gardener to F. HOBSON, Esq., The Prospect, Trowbridge, Wilts. (Thanks for contribution to R.G.O.F. Box.)
- Mr. W. G. GUISE, for the past five years Gardener to JAMES PORTER, Esq., Berthlywyd, near Conway, N. Wales, as Gardener to J. H. S. FULLERTON, Esq., J.P., D.L., Noblethorpe Hall, Silkstone, near Barnsley.

ANSWERS TO CORRESPONDENTS.

ADDRESS BOOKS: D. F. Thalacker's *Adressbuch*, published by Bernhard Thalacker, Leipzig-Gohlis, Germany. We have not a copy of a French gardeners' directory.

BOUQUET OF CUT FLOWERS: H. H. According to the terms of the schedule, any cut flowers could be shown, for annuals, biennials, and perennials were allowed. No provision was made to exclude bulbous plants. *Lilium dauricum* is a perennial. *Chrysanthemums*, *Delphiniums*, and shrubby *Phloxes* are also perennial plants. The schedule, like many others issued at local flower shows, is very loosely worded.

BLACK CURRANTS, RASPBERRIES, AND GOOSEBERRIES: Samuel. These plants are all gross feeders, and therefore require a liberal supply of plant food. Farm-yard or stable manure with moderate applications of superphosphate and kainit constitute the best stimulants they can be given. If sufficient natural animal manure cannot be obtained, then during the present autumn or early in winter apply to each square yard of soil around the trees a mixture composed of 6 ounces of superphosphate, 6 ounces of kainit, and 6 ounces of lime. In January or February next apply 8 ounces of Rape cake to each square yard of the soil around the trees and lightly

fork over the surface of the ground afterwards. If you can get any household suds, free from grease, you might give a liberal application of this liquid in showery weather during the month of March. Apply an extra dose of this liquid manure to the Raspberries, as these plants require a most liberal amount of moisture.

CARNATION SEEDLING: H. G. W. Striped or flaked varieties are common. Cultivate your plant for a season or two, and see if the flowers will improve in form and size.

CARNATION SPORTING: J. H. The variety you send has little or no value, being inferior to many already in cultivation.

COCCUS ON ELM-BARK: W. P. *Pseudococcus aceris* is the name of the insect on the Elm-bark. It is allied to the mealy bugs, but has not hitherto been recorded as really injurious, and judging from the comparatively few specimens present upon the piece of bark submitted we are of opinion that the sickly condition of the trees is due to some other cause. The insects can be destroyed by an application of paraffin emulsion or caustic alkali wash; but it is too late now to do any good as the larvæ are all hatched out from the white flocculent sacs and are probably feeding on the smaller branches. To be effective the wash should be applied soon after the white sacs are noticed on the bark, which is generally at about the beginning of July.

GRAPES STICKY: G. H. I. We cannot account for the presence of the sticky substance, unless it be a deposit from such insects as aphids.

GREEN PEAS TO PRESERVE: G. W. Take the Peas when they are just fully grown, but before they are old; shell them, throw them into boiling water and let them boil for 10 minutes. Drain well, and spread them out on tins. Put them into a cool oven once or twice to harden, then put the Peas into paper bags, tie the bags securely, and suspend them in a dry, warm room until wanted. Before using them, soak them in water for a short time and put one ounce of butter into the water in which they are boiled. Another method is to gather the Peas on a fine, dry day, open the pods on a large, clean cloth and leave the Peas for five or six hours exposed to the sun and air. Dry them gently in a rough towel, bottle them securely and in such a manner as to exclude air, or store them in a dry place.

HORSE CHESTNUT TREE: H. S. You cannot do better than cut it off very low and apply the acid occasionally.

LAND FOR VEGETABLES: H. K. You want to know what amount of land is required to produce a good supply of vegetables for a children's hospital accommodating about 250 persons, including staff. It is difficult to give anything like an accurate answer to this question, as so much will depend upon circumstances, such as the nature and suitability of the land, and its manuring, cropping and cultivation. However, we should say that four acres of good land would suffice, provided the ground is well manured, skilfully cropped, and given every attention that is necessary. Keep the crops free from weeds, and the surface soil stirred at intervals of a few weeks, between the rows of Carrots, Onions, Parsnips, French Beans, Scarlet Runners, Peas, Cabbages, Cauliflowers, &c., not only in order to destroy seedling weeds but also to stimulate growth in the various crops. As soon as the ground has been cleared of one crop it should be given what manure is considered necessary, and afterwards it should be dug or ploughed, and cropped again. Four acres will afford one rood to the supply of each 15 people, or thereabouts.

PEACH STONES SPLITTING: Enquirer. Either of the checks you mention will cause the stones to split. Excessive water at the roots is frequently accountable for the trouble. We do not know that the variety you mention is more susceptible to this injury than others.

PEAS: H. T. W. Your Peas are in a hopeless condition. The pods are attacked by the Bean Anthracnose, *Gloeosporium Lindemuthianum*. The base of the stem has been attacked by insects; and the foliage shows the advent of spots due to some hitherto undeveloped parasite. You should root up and burn all you can, disinfect the soil, and plant neither Beans nor Peas in the same soil for two or three years to come.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. Correspondents not answered in one issue are requested to be so good as to consult the following numbers. FRUITS: G. B. Raby Castle.—C. E. A. Immature Apples cannot be named with certainty. Send again later when the fruit is in season.—A. H. S. Myrobalan Plum.

PLANTS: J. U. *Verbascum Thapsus*.—T. H. *Rubus odoratus*.—G. C. 1, *Deutzia crenata*, double-flowered variety; 2, *Spiraea filipendula*.—N. S. *Chichorium Intybus*: the Chichory. —J. S. 1, *Oncidium luridum guttatum*; 2, *O. triquetrum*.—C. B. 1, *Alnus incana*; 2, *Viburnum dentatum*.—Horius. 1, *Spiraea Douglasii*; 2, *S. japonica*, callosa; 3, *Kalmia latifolia*; 4, *Centaurea macrocephala*; 5, *Lythrum salicaria*; 6, *Betonica spicata*.—A. B. 1, *Epidendrum indivisum*; 2, *Oncidium tetrapetalum*; 3, *Stelis micrantha*; 4, *Coelia bella*.—F. B. 1, *Calampelis (Eccremocarpus) scaber*. A useful outdoor climber.—H. J. D. *Eucomis punctata*. A Cape bulb, hardy in sheltered situations.—C. S. *Selaginella Wildenovii*.—L. H. 1, *Fumaria officinalis*; 2, *Aethusa Cynapium*; 3, *Erodium moschatum*; 4, *Calamintha officinalis*; 5, *Sedum rupestre*; 6, *Sedum Telephium*.—A. W. S. 1, *Ceanothus thyrsiflorus*; 2, *Spiraea Lindleyana*; 3, *Pavia macrostachya*; 4, *Solidago Virgaurea*; 5, *Achillea tomentosa*; 6, *Inula glandulosa*.—X. Y. Z. 1, *Hypericum Moserianum tricolor*; 2, *Verbascum nigrum*; 3, *Hypericum androceum*; 4, *Lilium chalcidonicum*; 5, *Lysimachia vulgaris*; 6, *Escallonia rubra*.—Fresco. 1, *Polystichum angulare* var. *proliferum*; 2, *P. aculeatum lobatum*; 3, *Lastrea Filix-mas*; 4, *Athyrium Filix-femina* var. *rheticum*; 5, *Aspidium Filix-femina* var.; 6, *Lastrea oreopteris*.—W. W. We do not undertake to name varieties of Carnations. The flower you send is probably *Cecilia*.—F. C. *Tradescantia virginica*.

ROSES ON IRON STANDARDS: L. W. K. Place a thin strip of wood up the support, and secure the growths so that they will come in contact with the wood only. In the case of chains, you should bind some cloth material around them at the places where the shoots will be fastened.

THE LOGANBERRY: T. M. The propagation and cultivation of this plant are generally similar to those required by the Raspberry. See a note on this fruit in our Calendar on the Hardy Fruit Garden, p. 129.

TWIN CUCUMBER: F. B. Such examples are not uncommon; we usually receive similar specimens during the season. The abnormality is caused by a fusion of two fruits.

VIOLAS DYING: F. O. The plants are attacked by a fungus disease. Spray the foliage with a fungicide, such as Condy's Fluid or sulphide of potassium— $\frac{1}{2}$ oz. to 3 gallons of water.

WEEDS: A Reader. The best plan is to burn them on the garden fire. They may also be destroyed by exposure to the air after they are uprooted. If the ground is trenched, the stolons can be removed as the digging proceeds, and be afterwards burned. We have never used electricity for destroying weeds. For information on the sterilisation of soil see an article which commenced on p. 129 in our issue for March 2, 1907.

COMMUNICATIONS RECEIVED.—H. G. A.—W. P. W.—S. A. S.—W. H.—E. W. D.—Zomba—W. F. G.—A. J.—J. L.—Portland House.—A. C. F.—C. B. B.—H. H.—G. M. A.—P. J. P.—W. F. J.—S. J. McC.—J. C. McC.—A. W. S.—H. A.—C. A. B.—S. A.—J. H. H.—W. B. C.—H. J. G.—H. F.—de B. C.—T. J.—A. M. C.—J. C.—W. L., Manila—W. T.—S. P.—H. F. M.—J. C. T.—A. B.—D. C. B.



THE

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DALTON HOLME, BEVERLEY.

DALTON HOLME, the residence of Lord Hotham, whose family have held the large estates in connection therewith for many hundreds of years, is situated some six miles from Beverley on the southern side of the Yorkshire wolds. The park that surrounds the mansion consists of some 400 acres of undulating land which is well furnished with trees, principally of Oak, Beech, and Elm. When the present Lord Hotham came into possession of Dalton Holme, about the year 1872, he decided to carry out extensive improvements in the mansion, home grounds, and gardens, and the advice of the late Mr. Broderick Thomas was sought, especially as to the development of the landscape on the farm lands outside the park.

Time has proved that on the whole, the improvements recommended by this expert were of a satisfactory character. The principal fronts of the mansion face eastward and westward. Leading to the east front is a carriage drive that is enclosed from the park by a very ornamental forecourt with gates at either

corner. On the western side of the mansion is the principal flower-garden, which takes the form of a sunken panel with a broad, well-kept gravel path surrounding the whole. The original design of this flower-garden has been much improved in recent years by reducing the number of the beds, dispensing with the intricate box-edging and small gravel paths that surrounded them, and by substituting turf as a base to the whole. Owing to the cold, unseasonable weather this season, the more tender bedding-plants were not well developed at the time of my visit, though it was easy to imagine that a little later the general effect would be very good. Begonias in groups of varieties of distinct colours were a prominent feature. Abutilons, Cannas, and other suitable plants were tastefully disposed as foils to dwarfer-habited flowering plants. Antennaria tomentosa was freely used for edging purposes. A number of clipped golden Yews were the best examples of topiary work the writer has seen. The trees were some 4 to 5 feet in height and the same in diameter, and they were cut in such a manner as to resemble an American Aloe, each stem representing a leaf thereof.

At the base of the low wall that supports the gravel path near to the house is a border of Tea and Hybrid Tea Roses. These are planted in patches of from six to nine plants, and comprise the following varieties: Souvenir de T. Levet, Mme. Haaste, Papa Gontier, Mme. Falcot, Anna Olivier, Viscountess Folkestone, Maman Cochet, Mme. Lambard, and Marie Van Houtte. Seedling Aquilegias of a choice strain raised their flower spikes at intervals amongst the Roses, and the borders of the Rose beds were edged with blue and white Violas.

On the further side of the path that bounds this panel garden commences the extensive lawn, which is the leading feature of Dalton. This had often been described to me by gardening friends, but I was not prepared to find it so remarkable. It is about eight acres in area, and of oval shape, with one apex nearest the house cut off. At the further end there is a long avenue, terminated with an ornamental tea-room, the architecture of which is in keeping with that of the residence. The turf of this lawn is very good, and it is interspersed with patches of heather, which, although trimmed regularly, develops small flower spikes at the base of the growths. On either side of the sward there are double avenues of healthy Beech trees, with towering heads, fully 90 feet in height. The bottom branches develop six or eight feet from the ground line, thus showing the massive trunks of the trees, and affording a view some distance into the woodland behind them. The avenue first mentioned is bordered by Rhododendrons in variety, but especially with *R. ponticum*.

The walks that lead to the upper portion of the grounds extend through the large Beech avenues, hence the grass area of the lawn is not intersected by walks. The Beeches on the northern side are continued up to the mansion so as to give shelter to the terrace garden. Large portions of the outside walls of the mansion, which is built mainly of light-coloured bricks with stone dressings, are covered with *Ampelopsis Veitchii*. I was informed that in autumn the foliage assumes beautiful tints which it does not always develop in northern districts. At the southern end of the

house there is a moderately large conservatory which has an entrance into a corridor connected with the main reception rooms. At the end of the house, near to the conservatory, there is a very fine specimen of the old Rose Fellemburgh. The plant covers a space fully 16 feet in height and as much in width. It was covered with flowers. From the conservatory in a south-westerly direction a path leads to the kitchen-garden and glasshouses. It extends through a part of the pleasure-grounds that is furnished with groups of choice flowering and foliage shrubs, with single specimens at intervals. The last portion of this path is between two borders of choice H.P. Roses backed with Yew hedges in which at every 4 yards are recesses, each containing a fine specimen of the golden Irish Yew.

The area enclosed for kitchen gardens, orchards and the reserve garden is about eight acres. In the centre are four acres enclosed by high brick walls. On the side nearest the mansion is an enclosed portion surrounded with a Yew hedge and fronted by Rose and herbaceous borders. The plants in this quarter are grown for supplying cut flowers. A grass-covered path gives access to the borders. The walls that enclose the kitchen garden are well clothed with healthy fruit trees most of which are in a good fruiting condition. Pear trees in particular were very clean and fairly well fruited. Dalton has long been noted for the fine Pears produced in its gardens. Hundreds of these fruits are now enclosed in small bags made of some light material. Apples, Plums, Cherries and Peaches were all satisfactory, while small fruits were abundant. I was somewhat surprised to find Peach trees succeeding so well trained to wires. My own experience has been against this practice in the north. The wires were fixed 6 inches apart and not more than from $\frac{1}{2}$ to $\frac{3}{4}$ of an inch from the wall.

A list of the leading varieties of fruits grown includes:—Apples—Keswick Codlin, Lord Suffield, Pott's Seedling, Cox's Orange Pippin, Normanton Wonder, Mr. Gladstone, Peasgood's Nonsuch, Newton Wonder, Allington Pippin, Lord Burghley (very good), and Charles Ross. Plums—Early Rivers, Victoria, Pond's Seedling, Coe's Golden Drop and Kirke's. Cherries—Elton, May Duke, Governor Wood, Noble and Morello. Pears—Williams' Bon Chrétien, Clapp's Favourite, Louise Bonne of Jersey, Marie Louise, Doyenné du Comice, Beurré Diel, Conference, Pitmaston Duchess, British Queen, Furondeau, Easter Beurré and Winter Nelis. The best Pears are obtained from triple cordons grafted on the Quince stock. Strawberries—Keen's Seedling, Leader and Royal Sovereign. Peaches—Waterloo, Amsden, June (almost ripe on July 22), Early Silver, Grosse Mignonne and Walburton Admirable. Nectarines—Early Rivers and Lord Napier. All of these fruit trees had good crops of fine healthy fruit.

The kitchen garden was well cropped with the leading kinds of vegetables. Well arranged borders of hardy herbaceous plants skirt each side of the central path. Both borders are edged with a broad line of *Campanula carpatica* alba, at full flower at the time of my visit. In the alleys at the back of each border, are wire arches that are covered with some of the choicer varieties of rambler Roses, and other climbing plants with a single line of

strong-growing herbaceous plants and Sweet Peas, the whole making a pleasing contrast to the vegetable quarters behind them. A great variety of plants form the edgings to the walks both in the kitchen garden and the portions of the grounds attached thereto. Fully three-quarters of a mile of these walks is

in area, the demand being mainly for table plants and for those that are suitable for room-decoration in the winter months. One house contained Carnations, mostly *Souvenir de la Malmaison* varieties, including *Princess of Wales*, *Cecilia*, *Prime Minister*, *Old Blush*, *Sir C. Freemantle*, *Miss A. Campbell*, *Calipso*,

The head gardener's dwelling forms an important feature in the grounds, and there has recently been erected a very commodious residence for the young gardeners.

Mr. Allsop informed me he owes much of his cultural success to a knowledge of chemistry which he acquired years ago. It



FIG. 55.—DALTON HOLME, BEVERLEY; THE RESIDENCE OF LORD HOTHAM.

bordered by *Gentiana præcox*. It was easy to see from the old flower spikes what a beautiful sight this bordering must have presented when in flower. *Saxifraga umbrosa* (*London Pride*) is another plant used on a large scale for this purpose at Dalton Holme. Box was very little in evidence. The glasshouses are not so numerous as in some other large gardens, but they are well adapted to the purposes for which they are intended. They were erected in the early 'seventies by Messrs. Messenger, of Loughborough, and are still in good condition. One of the original boilers of the hot-water system was only removed last winter, being replaced by a large "Quorn" boiler, which Mr. Allsop, the gardener, informed me, answers well. The main range of plant houses is backed by the south wall of the kitchen garden and consists of a large span-roofed greenhouse in the centre, and on either side of this are two hip-roofed vineries, each 40 feet in length and 18 feet in width.

In the early vinery Buckland Sweetwater comes to greater perfection than I have witnessed it elsewhere. The late vinery is planted with the varieties *Lady Downe's*, *Black Alicante*, *Gros Colmar* and *Mrs. Pearson*. The vines are trained on the short spur system, though the plants are not confined to one rod; some have two and three rods each.

I have seen fruit exhibited from these vines at the northern shows during a period of nearly 30 years, and the exhibits have been very successful. The crops generally this season are good.

The glass devoted to plant culture is limited

Floriol, *Horace Hutchinson*, and *Galatea*. As an edging were used small plants of *Centaurea candidissima*, *Primula obconica*, *Lobelia Catherine Mallard*, with a drooping fringe of *Linaria* and *Asparagus* in variety. Under each stage were four brick enclosures situated

has enabled him to properly mix manure so as to suit the various plants and fruits to which it is applied. The soil at Dalton is a good loam resting on clay with a base of chalk. An excellent supply of water is available all over the estate. *Yorkshire Gardener*.



FIG. 56.—VIEW OF THE GARDENER'S COTTAGE AT DALTON HOLME.

at equal distances apart. In these were growing, in pairs, Ivy-leaved *Pelargoniums* *Ryecroft Surprise* and *Souvenir de Charles Turner*. They formed masses of foliage and flowers right up to the angle of the roof and fully a yard in diameter (see fig. 57).

ORCHID NOTES AND GLEANINGS.

ODONTIODAS.

WHEN these interesting plants are more numerous, and they become better known as a race, there is a possibility of their equalling, and perhaps exceeding in popularity, the much-prized genus of *Odontoglossum*. They have recently evoked much discussion, and a few notes respecting them have already been published, but nothing in the form of a complete list has appeared, hence it may now be opportune to give one. The year 1908 should materially add to the interest taken in the new "red race" of Orchids, for there can be little doubt but that the influence of red upon the progeny of *Odontoglossums* and *Odontiodas* will be even greater than is that of *O. Harryanum*, for it will create a new colour, which will permeate the whole family, and ramify to all the allied genera, when the linking-up operation is effected by the hybridist.

Since the time that *Odontioda Vuylstekeæ* appeared at the Temple Flower Show of May 31, 1904, and created such a furore, almost all raisers of Orchids have taken the matter in hand. Considering the short time that has passed since then, great progress has been made, and seedlings of similar crosses exist in many parts of England and on the Continent.

Mr. Charlesworth had previously raised plants which in due time bloomed, and were named *Odontioda heatonensis*, *O. Bohnhoffiae*, and *O. Bradshawiae*. Mr. Stevens, in the Walton Grange Collection, has also several seedlings of a similar cross as that which produced *O. Vuylstekeæ*; some of these should flower in 1908.

In these days, when size of flower and value of plant are the objects, the first results in the primary hybrids will be in many cases disappointing, for the difficulty of utilising a large-flowered species of *Odontoglossum* as the seed-bearing parent is great, but to those persons who do not especially consider size and value, the results will be equally as acceptable, for they will command a "breeding" value, as

Rolfé's articles in the *Orchid Review* of June, 1907, p. 181, and July, 1907, p. 222. At that time I had plants of three *Odontoglossums* crossed with *C. Noezliana*, hence it was unlikely I should have stated it could not be effected. The note in the July issue was written at my request, but it did not fully solve the question.

The information regarding crosses with *C. Noezliana* as the pollen parent in the "Thwaites Collection" (see *Orchid Review*, August, 1907, p. 227) is most interesting, and corroborates my above made statement regarding the ramifications one may expect. I hope to see many additions to our knowledge of this matter as time progresses, for if it be possible to raise freely

Respecting the failure in this case—and I have examined scores of them—I find that the pollen tube has never penetrated to the ovary, even though the column swells normally, as does the ovary to a less degree. The pollen seems to decay upon the stigma and effect irritation only, and not impregnation.

The records to date will be interesting, hence I tabulate them under different headings. I know of others, but for various reasons do not publish them.

CROSSES RAISED WITH *COCHLIODA NOEZLIANA* AS THE MALE OR POLLEN PARENT.

noble	...	Vuylsteke	= <i>Odontioda Vuylstekeæ</i>
crispum	...	Thwaites	O.R. Aug. 1907, 227.
Edwardii	...	"	"
ramosissimum	...	"	"
Kege-jani	...	Crawshay	"
Hallii	...	"	"
nobile	...	"	"
Rossii	...	"	"

I have succeeded with other *Odontoglossums* as the seed parent, but as yet I have not plants that can be written about, though it looks as if this will be possible in the near future.

TABLE OF ODONTIODAS.

Name.	Raiser and Exhibitor.	Exhibition or Publication.
<i>Vuylstekeæ</i> ...	Vuylsteke	Temple Show, May 31, 1904 (F.C.C.)
<i>Heatonensis</i> ...	Charlesworth	R.H.S., March 6, 1906 (A.M.)
" <i>St. Vincent</i> ...	"	R.H.S., December 11, 1906 (A.M.)
<i>Bohnhoffiae</i> ...	"	R.H.S., September 25, 1906 (A.M.)
<i>Vuylstekeæ</i> ...	Vuylsteke	Dresden, May 5, 1907.
" ...	Charlesworth	Temple Show, May 28, 1907.
<i>Bradshawiae</i> ...	Thompson	R.H.S., June 25, 1907.
<i>Walton Grange var. Vuylstekeæ</i> ...	Fowler	<i>Gardeners' Chronicle</i> , July 27, 1907, p. 63.

The last two were raised by Mr. Charlesworth.
de B. Crawshay.

TREES AND SHRUBS.

ULMUS ALATA, MICH.

(THE WAHOO OR WINGED ELM.)

A. D. W., on p. 103, writes of this tree as occurring on Welsh hillsides at 600 feet elevation. I have not the least doubt that what he saw is simply the corky-barked form of a variety of *U. campestris*, which was known to Loudon and others as *U. suberosa*, and which I believe to be a very inferior tree in all respects to either the true English Elm or the Wych Elm. The young branches of this form often take on the winged character figured by Michaux in *U. alata*, a small tree of the southern United States, which I have never seen in England, and which would be very doubtfully hardy in the warmest parts of this country. Even in its own country it is quite a small tree, being, according to Sargent, rarely 2 feet in diameter. H. J. Elwes, *Colesbourne*.

PROTECTING TREE-STEMS FROM HARES.

A VERY simple and effective means, and one that I have used and advocated for years past, is to bind as much of the stems as can be reached by hares or rabbits, with two or three-fold fish-netting. Put on neatly, this is by no means unsightly, and neither hares, rabbits, nor mice will tackle the bark of trees so protected. Old fish-netting too rotten for further use on fruit walls or plots may be used, and will last for years. There are trees here which were protected in this manner eight years ago, and the protection appears as good as ever. I write from a place in which hares are extremely numerous, and, though they have a free run of the orchard, I have never found a protected tree attacked, though any newly-planted tree which may be left unprotected is sure to be ruined in a night. J. C. Tallack, *Shipley Hall Gardens, Derby*.



FIG. 57.—INTERIOR OF CARNATION HOUSE AT DALTON HOLME, WITH IVY-LEAVED PELARGONIUMS OVER THE PATH. (See p. 142.)

being far more likely to cross freely upon *Odontoglossums* than *Cochlioda* itself.

Although the reason is not definitely known, it is generally considered that the pollen tubes of a *Cochlioda* have not the capacity of freely penetrating the longer column of an *Odontoglossum*, though this is not an absolute rule, for I have raised plants of *O. Hallii* ♀, × *C. Noezliana* ♂, and *O. Hallii* has one of the longest columns in the genus.

This brings me to the subject of *C. Noezliana* as a pollen parent, and about which I wish to clear up some misapprehensions in Mr.

upon *Odontoglossums*, time will be gained by getting increased size in the primary hybrids, this being proved by the comparison of *O. Vuylstekeæ* with any of the others raised by using *Cochlioda* as the mother parent.

If the reason of our frequent failure with *Odontoglossum* as the seed parent be as it is supposed, there can be no doubt but that the hybrids will remove much of the disability, and the first seed upon *O. crispum* obtained in this way will produce the nearest approach to a scarlet form of *O. crispum*, which is so anxiously awaited.

CAMPANULA MIRABILIS.

We have already illustrated this remarkable species of Campanula as it flowered in a border against a wall in the Royal Gardens, Kew. (See *Gardeners' Chronicle*, October 7, 1899). Mr. William Barbey Boissier, has, however, sent us such a pretty photograph of the plant in full flower on the rock garden at Valleyres, in Switzerland, we reproduce it with a sketch showing a spray of the flowers about natural size.

Campanula mirabilis was discovered by M. Alboff on September 2, 1894, on the calcareous rocks of Mount Arbika-Akhgösch, in the Caucasus. He found a unique specimen, from which plate I. of the *Prodromus Floræ Colchicæ* was drawn.

"The enclosed photograph" (see Fig. 58), writes M. Boissier, "was taken at Valleyres, Vaud, Switzerland, by Mr. Frederic Barbey, who will be pleased to give seeds to anyone who may address him. The leaves shown at the top of the picture in the left corner also belong to a plant of *C. mirabilis*, which will, no doubt, flower in 1908. The species is monocarpous. For full particulars see *Bulletin de l'Herbier Boissier*, 1895, p. 228."

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, ante, pp. 84-90.)

(Continued from page 134.)

5.—SOUTHERN COUNTIES.

BERKSHIRE.—The fruit crops in this neighbourhood are well up to the average, but the trees suffered much from insect pests during the cold and sunless weather late in spring. Strawberries gave promise of an abundant crop, but the earlier flowers were ruined by frost, and later the fruits rotted on the ground before they were ripe. Among small fruits, Raspberries and Black Currants are especially good. *J. Howard, Benham Park Gardens, Newbury.*

—Early in the season the general promise of the fruit crops was good, but when the Apple blossom developed they were seen to lack colour and substance in the flowers. Then followed a prolonged cold and sunless period, and as our chalky soil has a very cold situation, the result was disastrous, and to the Apple crop in particular. Generally these latter fruit trees have a miserable and barren appearance. Apricots and Plums upon wall trees are very good, whilst all small fruits are abundant. *W. Fyfe, Lockinge Gardens, Wantage.*

—The fruit crops in this neighbourhood are generally about an average in quantity. Apricots are above an average quantity, whilst Plums are a very heavy crop. Gooseberries and Currants are also abundant, and Strawberries would have been excellent but for the heavy rains of early summer. These caused the finest fruits to rot on the plants. The soil in this neighbourhood is gravelly, and the wet season has suited all kitchen garden crops. Potatoes in particular promise well. *James Coombes, Englefield Gardens, near Reading.*

DORSETSHIRE.—The following is a copy of a note I made on May 20:—"The weather for the past few days has been very cold; the N.E. wind which has prevailed may prove a little disastrous to the fruit crops, all of which are in need of sun and warmer conditions to encourage the newly-set fruit to grow." My anticipations have, alas! proved correct in respect to Apple, Pear, and Plum trees. I never recollect seeing Apple and Pear trees in particular, so badly infested with aphids, and the former appear wretched. Our trees of Cox's Orange Pippin are now almost leafless, the leaves having turned yellow and dropped off. Plums are an average crop, and, given root waterings, the fruits may finish fairly well. Of Peaches and Nectarines the crop is the best I have known for some years, and Apricots the best crop I ever recollect. The fruit set in clusters evenly over the trees, and have needed much thinning. Of small fruits Gooseberries are a record crop. Red and Black Currants and Raspberries are also abundant, and of excellent quality. Strawberries, which gave some anxiety owing to the berries rotting through the excessive wet, have,

since the weather improved, been excellent. Walnuts are a fair crop, but Cobnuts are very scarce. We have an excellent crop of Morello Cherries, but the fruits of sweet varieties cracked badly. It is a mystery why the Morello Cherry should succeed well in this county and sweet Cherries indifferently. The soil generally is a strong, dark loam on a rocky sub-soil, with clay in places. *T. Turton, Castle Gardens, Sherborne.*

—Apples on the whole are a short crop, although the trees of some varieties are carrying a fair quantity of fruits. The trees flowered remarkably freely, but owing to the wet, cold, sunless weather and frosty nights, the fruits failed to set. These remarks apply also to Pears. Plums are plentiful, especially the varieties Orleans, Victoria, Pond's Seedling, Belgian Purple, and a few others. The nights were frosty when the blossoms were expanded, but the weather was dry, and the flowers of Plums receive more protection from the foliage than those of the Apple. All small fruits are a splendid crop, especially Royal Sovereign and

The season of this fruit has been an extended one owing to the dull weather at the time the berries were ripening. Potatoes promise most unfavourably, and much disease is apparent in the haulm. *E. Molyneux, Swanmore Park, Bishop's Waltham.*

—On the whole the fruit crops are most satisfactory. Apples are a good average yield, and the fruits are clear in the skin, but the trees are somewhat infested with aphids. Apricots and Plums are both satisfactory: the crop of the former is better than any of the past seven years. Small fruits are a full crop, especially Raspberries and Gooseberries; the latter are exceptionally abundant and of fine quality. Strawberries, although somewhat affected by the frost of May 18, when much of the early bloom was destroyed, and, later, by excessive wet, have been plentiful and of good quality. Givon's Late Prolific, grown on a north-east border, will carry the season of this fruit well into August. *A. G. Nichols, Strathfieldsaye Gardens, Mortimer R.S.O.*



FIG. 58.—*CAMPANULA MIRABILIS* FLOWERING ON A ROCKERY IN SWITZERLAND.

Givon's Late Prolific Strawberries. Mulberries, Medlars, Walnuts, Filberts, and some varieties of Damson are plentiful. Our soil is of a light nature, and contains much chalk. *Thomas Denny, Down House Gardens, Blandford.*

—The soil is a light loam, resting on gravel. Plums, Apricots, and some of the older varieties of Apples succeed well in these gardens, but Cox's Orange Pippin does very badly. The crops are backward, and the fruits will be small. Pears on wall trees are very good, and Peaches on an east wall are very fine indeed. *David C. Fyfe, Kingston House Gardens, Dorchester.*

HAMPSHIRE.—Apple trees have never, during the last 30 years, presented such a miserable appearance, and in the case of some trees the leaves are all dead, owing to the unfavourable weather. The fruits, too, are much disfigured. Plums are an extraordinary crop, and the trees are in excellent health. Bush fruits of all kinds are an enormous yield. Strawberries have done well.

KENT.—Although the fruit crops are plentiful, Apples and Pears promise to be small in size on account of the cold nights and sunless weather of early summer. Small fruits are very good. *W. S. F. Sparks, Walmer Place Gardens, Walmer.*

—Apples were in flower during wet, cold weather, and the fruits set badly. Orchard trees on the Crab stock are almost bare of fruits. The trees on the Paradise stock are carrying a fair crop of fruit. Pears require genial weather to mature and swell. Plums and Damsons are enormous crops. Early varieties of Cherries have been much injured by cold winds and frosts, and later ones to a lesser degree, although the latter have improved with the change of weather. Strawberries were retarded by the cold and wet weather, and the berries were neither as large nor as sweet as usual. Black Currants are a grand crop of very fine berries. *George Bunyard, Maidstone.*

— The following remarks apply to orchards (a) on the outcrop of the loam greensand or Kentish rag, and (b) on the Weald clay. The soil of (a) is a strong loam, much mixed with stones; that of (b) is a very tenacious clay, and is fairly level, while (a) rises from it to a height of 270 feet in rather less than a mile. Only orchard trees of Apples, Pears, and Plums are referred to on (b), so that the rest of the report refers only to (a). Taking the scale given below, which I think represents the amount of crop more accurately than the words "under," "over," &c., I should call the Apple crop on (a) 3, and the Plums 5; while on (b) the Apples are 1 and the Plums 3-4. There is not only a difference in soil between (a) and (b), but a considerable difference in climate, the day temperature being higher and the night lower in (b). I have little doubt but that the whole of this slope formed by the outcrop of the lower greensand is the

trees failed to set, and in others the fruits have dropped considerably since they were formed, and they still continue to fall. The fruits are much infected by the maggot. Pear trees in general promise a fairly satisfactory crop; whilst stone fruits are more abundant and of better quality than in any year since 1901. Strawberries were good in general, though the crop in many low-lying situations was severely damaged by late frosts. Our soil and situation is very variable. *Geo. Fennell, Bowden, Hadlow Road, Tonbridge.*

— I have never seen fruit trees of all kinds with more blossom than this season. The majority of our fruit trees are quite young. Apple trees set their fruits well, and the Apples needed thinning, which was done early; at the time of writing the Apple crop is very promising. This remark also applies to Pears. Plums are an exceptionally heavy crop on all trees, and Cherries

— The unseasonable weather has adversely affected the fruit crops in this district. The excessive wet has made spraying for insect and fungus pests of little use. The caterpillar of the Winter Moth has done more harm this season than it has caused for 15 years, solely because spraying in wet weather was ineffectual. The value of shelter from wind for fruit trees has been amply proved this season. The protection given by Poplar and similar shelter trees has done more to save the fruit crops than any other cause. *B. Champion, Baron's Place, Moreworth.*

— Strawberries throughout this district have proved an average crop, but owing to an absence of sunshine, the berries were poor in colour. The variety Royal Sovereign shows signs of "wearing out," but a variety to take its place has not yet appeared. The varieties Sir J. Paxton and James Veitch are still largely grown, and for the making of jam Stirling Castle is still a favourite, being prolific in cropping, of good colour, and of grand flavour. Strawberries were lacking in weight, as the utensils used for their transit did not hold the requisite weight this season without crushing the berries. This is remarkable, after so much moisture and dull weather. Raspberries promise heavy crops, especially the variety Superlative. *W. E. Humphreys, The Gardens, Blenden Hall, Bevelay.*

MIDDLESEX. — Our soil is very light in texture and on gravel subsoil; the present rainy season has therefore been of considerable benefit to small fruits, which are above the average in size. Apple, Pear, and Plum trees all gave exceptional promise, when they were in flower, and I attribute the poor set of fruits to cold winds and frosts, but particularly cold winds, as I find, in more sheltered parts, there are some excellent crops in the neighbourhood. *John Bates, Syon Gardens, Brentford.*

— Generally, the fruit crops are an average in quantity, though they will be late in maturing. The foliage and fruits of some kinds of Apples have greatly suffered through excessive wet and lack of sunshine. This is especially the case with Cox's Orange Pippin. We have a heavy crop of Peaches, and the growths of these trees have lately improved. Late varieties of Strawberries suffered when in blossom, but, on the whole, we have very little to complain of in the case of this fruit. Our soil is somewhat gravelly and porous, and requires a plentiful supply of moisture in hot weather. Caterpillars and aphids were numerous and destructive on Apple and other trees early in the season. *H. Markham, Wrotham Park Gardens, Barnet.*

— Our fruit crops, generally, are satisfactory, but the trees, especially Apples, are blighted and crippled through the cold and unseasonable weather experienced during the latter part of May and June. Most of the soil in this district is a stiff loam resting mainly on clay. In some places the subsoil is gravelly, and on this the top soil is of a light nature. No finer prospect for a plentiful fruit crop could be wished for than the appearance of the trees when they were in blossom, but the cold winds and low night temperatures checked growth. The weather is still unseasonably cold: this morning (July 24) the temperature was down to 45° Fahr. Late Strawberries are not ripening well. *W. Watson, Harefield Place Gardens, Uxbridge.*

— The fruit crops in this district are the best we have had for some years, and the trees are free from blight. Pears are the lightest crop. All small fruits are plentiful. Our soil is a good loam on gravel. *W. Bates, Cross Deep Gardens, Twickenham.*

— Apple trees are much infested with mildew this season, and especially in the case of bush trees of Cox's Orange Pippin. This I attribute to the cold, damp, and sunless weather. Pears are a very thin crop on wall trees, but on the bush, pyramid, espalier, and standard trees the crop is an average one and the fruits are clean. Peaches and Nectarines are always plentiful here. Peach trees planted against a west, and Nectarines against a south wall, in soil with a gravelly subsoil, have not failed to furnish a crop of fruits for the past 15 years. Apricot trees are planted in a low, well-drained situation, resting on a clay subsoil, and trained against a wall facing south-east. They are a great success. Plums are very good this season. Strawberries and other small fruits are planted in gravel and clay soils, earlier varieties on the former and

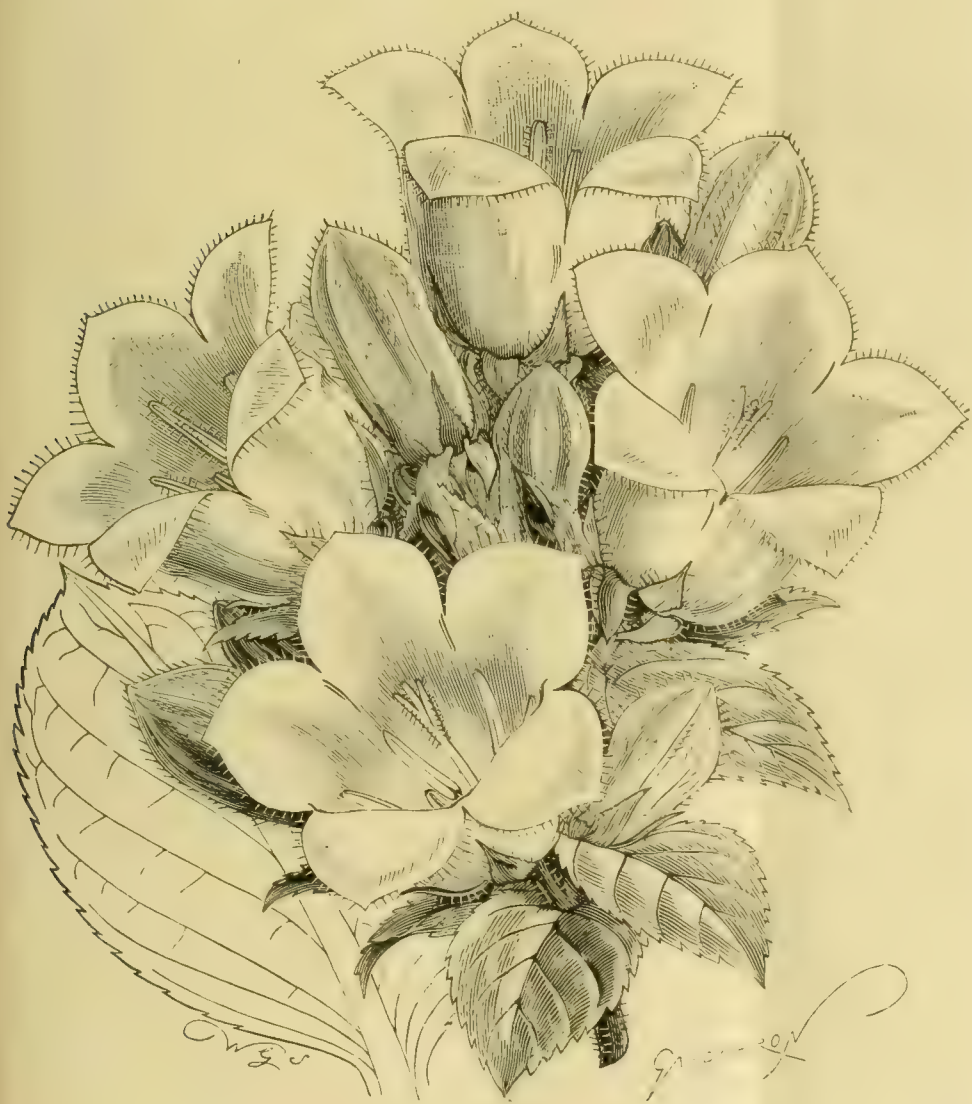


FIG. 59.—*CAMPANULA MIRABILIS*: FLOWERS PALE BLUE.

(For text see page 144.)

choicest orchard land in Kent, and, probably, in England, and should not be wasted on ordinary agricultural crops. It is worthy of note that at the great fruit show of the Royal Horticultural Society last October, in the "Gardeners' and Amateurs'" Class, both the 1st and the 2nd prizes for 24 dishes of Apples were taken by collections grown on this slope, the 1st at Hunton, the 2nd at East Sutton. The lowest shade temperatures in the blooming season recorded here were 33° in April and 35° in May. The following is the scale upon which my remarks are based: 0 = no crop; 1 = very poor; 2 = rather poor; 3 = average; 4 = good; 5 = heavy. *Alfred O. Walker, Ulcombe Place, near Maidstone.*

— Apple trees were most promising at their flowering period, but the blossom on many

are plentiful all through this district. Apricots are also abundant. With regard to small fruits, Strawberries were a heavy crop, but, owing to the cold, dull, and wet weather, flavour was lacking, although, after a period of hot weather in the middle of July, an improvement was noticed in this respect. Amongst newer varieties Laxton's Latest has made a good impression here, being a robust and healthy grower and heavy cropper; the fruits are firm and of good flavour. Of Black Currants, Boskoop Giant stands out prominently as the best variety. If the later crops fulfil our expectations, 1907 should prove a very satisfactory fruit year. Soil is a heavy, retentive, clayey loam, and when the trees have become established, good crops of fruits are generally produced. *J. G. Weston, Eastwell Park Gardens, Ashford.*

later varieties on the latter, thus giving a good succession of fruits. Lord and Lady Suffield varieties of Strawberries have produced prolific crops: they are in great demand for preserving purposes. A. R. Allan, *Hillingdon Court Gardens, Uxbridge*.

— The fruit crops in this district vary considerably. There was an abundance of blossom on Apple, Pear, and Plum trees, but, owing to the cold winds and frost in May, some varieties of these fruits did not set well. We registered 3 degrees of frost on three consecutive nights, May 18, 19, 20. Apples Ribston Pippin and Allington Pippin are both carrying good crops; but of Lane's Prince Albert there is a very sparse crop. The best-cropped Pear trees are

NOTICES OF BOOKS.

INJURIOUS INSECTS.*

THIS, the fourth report on injurious insects issued from the Birmingham University, is from the pen of Mr. Walter E. Collinge, the Special Lecturer on Economic Zoology. No better testimony of the excellent results obtained from the author's investigations can be given than the numerous testimonials from various fruit growers in the Midlands which are quoted in the pages of the publication. The report is well illustrated, though we fail to see the practical utility of the use of such highly-glazed card for such excellent line drawings as are reproduced on the plates. We can, however, confidently

old paraffin emulsion, with caustic soda added, is claimed to have given excellent results against the attacks of the Apple sucker, mussel scale, and Apple aphid, so much so that the author proposes "to substitute this soda-emulsion spray-fluid in the future for the caustic soda and carbonate of potash spray-fluids given in previous reports."

We have already had occasion to refer to Mr. Collinge's work (see *Gardeners' Chronicle*, August 17, 1907, p. 127) in connection with the treatment of "big bud" in Black Currants, and we may add here, for the guidance of our readers, that "a more lengthy experience has shown that one part of freshly-ground, unslaked lime and two parts of sulphur acts rather better



FIG. 60.—NOTOSPARTIUM CARMICHAELIÆ FLOWERING AT KEW. (See p. 147.)

... by E. J. Wallis.

the varieties Doyenné du Comice, Beurré Clairgeau, Fondante d'Automne, Beurré Superfin, Thompsons, and Durondeau. Of Plums there is a heavy crop of Victorias in this district. Strawberries were a plentiful crop, but owing to frequent rains and an absence of sunshine many of the largest fruits were spoilt. Raspberries, Red and Black Currants have never been finer or more abundant, and the same may be said of Gooseberries. Much sunshine is needed to ripen and harden the vigorous growths made upon nearly all kinds of outdoor fruit trees. The soil here is a light loam overlying gravel. James Hawkes, *Osterley Park, Isleworth*.

(To be continued.)

recommend the report to all those who are interested in the treatment of pests of the garden and field. Altogether 48 pests are dealt with, nearly all of which are only too well known and generally distributed, but such insects as *Sinodendron cylindricum*, *Saperda carcarus*, and *S. populnea* are not likely to prove generally destructive to young, healthy trees.

A little over four pages are devoted to the results obtained from some experiments with insecticides. As a spray-fluid, a modification of the

than equal parts of these." That most destructive of pests the Pear midge "has been almost entirely destroyed" (in some orchards) "by the simple method of turning the surface soil"; dressings of Kainit having proved a waste of time and money, and fruit growers are warned against the application of this material. Vaporite is claimed as a remedy for wireworm; and a good crop of Swedes was grown on infested land dressed with this material. The same agent is recommended as effective for the root-feeding larvæ of the common Swift Moth (*Hepialis lupulinus*), a garden pest which has so often been recorded in the columns of the *Gardeners' Chronicle* as destructive to the roots of

* "Report on the Injurious Insects and Other Animals Observed in the Midland Counties during 1906," by Walter E. Collinge. Fourth report. Pp. 41, pl. 1-VI. Birmingham: Cornish Bros., Ltd., 1907. Price 2s. 6d.

various herbaceous plants, especially the Lily of the Valley. As a preventive against the attacks of the Carnation fly, spraying with a weak solution of carbolic and paraffin is recommended. The exact proportions of the formula are, for some reason, omitted, and without these we would warn horticulturists to be most cautious in applying such materials in a rule-of-thumb way, as being likely to lead to serious injury to plants with such tender foliage. A novel method of trapping millepedes, "with splendid results," is recommended by a Warwickshire correspondent: "Dig out in flower-beds a hole sufficiently large to contain the fist and wrist, and fill with bran . . . and cover with a flower-pot. After two or three days pour on to the bran boiling water. The contents of two such holes were carefully counted—one contained 2,448 dead millepedes and the other 1,793."

The report concludes with a short chapter on instructions for fumigating plant-houses with hydrocyanic acid gas, and stored products with bisulphide of carbon. Finally, under Appendix B, is a useful account of the metamorphoses of insects, intended for those possessing no special knowledge of entomology. We notice one or two errors in the text, thus—Hylesinus should read Hylesinus; Keuhniella (bis) Kuhnella; Budbeckia Rudbeckia. The fly credited with carrying off the larvæ of Tortrix viridana (p. 23) must surely have been a fossorial wasp allied to the genus Crabro and not as stated, by a correspondent, to have been an Ichneumon.

LANDSCAPE GARDENING.*

THAT the third edition of this work has appeared since the book was first published in 1900 shows clearly that there is an increasing demand for books of this nature, especially as it follows closely on others which deal more or less with the subject of garden-making.

The making of beautiful gardens cannot be achieved by following conventional rules and written prescriptions, and those who attempt it learn to appreciate the difficulties of an art which, though apparently simple, is one that requires something more than book knowledge. The planning and planting of artistic gardens is an art which, beyond all others (excepting, perhaps, landscape painting), is subject to conditional circumstances.

Every garden site varies, and must, therefore, be dealt with individually, according to the conditions of locality, soil, and surroundings, in order to produce a successful result.

Consequently, one can understand the difficulties which confront a writer who attempts to reduce to conventional rules the subtleties and intricate details that contribute to the composition of beautiful garden scenes.

The author of this book, however, conveys his knowledge of the "art and craft of garden-making" so far as it can be conveyed in writing and with the aid of plans and pictures.

All the departments of garden-making are dealt with in a more or less comprehensive way, from the choice of sites for a house, to the formation of terraces, lawns, ornamental water, roads and so forth, and chapters are devoted to garden structures for use and ornament, which are important considerations in gardens.

The keynote of the book is the "formal or architectural style," as distinguished from the "landscape style," and, consequently, a great part of the work is devoted to descriptions, illustrations, and plans of formal gardens.

The illustrations of these are of unequal merit: some are admirable, some are not; for instance, those numbered 235, 239, and 233.

Yet the least beautiful garden may be the outcome of the individual fancy of the owner, which no one has a right to criticise, even if illustrated in an instruction book, provided that such a garden is not set forth as an example of beautiful

English landscape gardening, the traditions of which should be jealously upheld.

Turning from these pages on formal gardens to those exemplifying the so-called and much-abused "landscape style," the contrast is marked. For example, the quiet, picturesque beauty seen in the illustrations numbered 174, 116, and others offers a pleasing contrast to the irritating fussiness of the so-called formal gardens with their redundant display of masonry, clipped shrubs, and such-like puerilities.



FIG. 61.—FLOWERING SHOOT OF NOTOSPARTIUM CARMICHAELIÆ: COLOUR OF FLOWERS PURPLISH PINK.

There is, perhaps, a danger at the present day of the intrusion of the architect into the province of the garden-maker, the result being that the gardens he makes remind one of raw canvas set in elaborate picture frames; they are as uninteresting as a garden generally is when laid out by contract, and they lack that cheerfulness which characterises a really beautiful garden.

The successful artist in garden-making is one

who is catholic in his tastes, is in sympathy with all the styles, has the requisite knowledge and ability to apply them, and does not need the assistance of an architect.

These are useful chapters set apart in this book to describing the details of planting, and good and discriminate planting is one of the most essential matters in the foundation of artistic gardens.

These details might have been amplified, and if the lists of selected trees, shrubs, and plants were fuller they would be the more helpful to those to whom the book more particularly appeals. The work is a very handsome volume, and, being written upon a fascinating subject, it is a valuable addition to garden literature.

NOTOSPARTIUM CARMICHAELIÆ.

THIS plant is sometimes described as half-hardy, but the specimen illustrated at fig. 60 is growing in the open at Kew, where it has flowered profusely this season. The genus contains but this one species, and the plant might easily be mistaken for a Genista. It is a native of New Zealand, and is known by the colonists as the "Pink Broom." The plant was discovered on Christmas, 1853, by the late Dr. Munro on the sandy and rocky banks of the Waihopai River, in the Nelson Province. The natural order Leguminosæ is represented by very few members in New Zealand. Notospartium Carmichaeliæ succeeds best in a peaty soil, but it can also be grown well in turfy loam. It is a moderate-sized shrub in cultivation in this country, and produces weeping, cord-like, leafless branches (see fig. 61), from which the short racemes of pink or purplish flowers are freely produced.

THE FERNERY.

DECORATIVE BRITISH FERNS.

FEW persons are aware that the comparatively few species of Ferns indigenous to Great Britain have yielded far more varieties, and these of a far more diverse and pleasing character, than all the rest of the world's Ferns together. Although among the normal forms our own cannot compete with exotic species as regards general beauty and diversity of foliage, when we come to the varietal forms, including those which have been obtained by selection under culture, the position is in a large measure reversed. A number of British Ferns, when fully grown and developed to their utmost capacity, find no rivals at all among exotics and display types of variation, of the occurrence of which in exotic species not a particle of evidence exists. This feature of variation we do not owe at all to cultural selection, since the starting point is always found in the wild plants themselves, which usually possess the faculty of transmitting their peculiarities to their offspring in varied degrees. Fifty odd years ago British Ferns and their varieties were all the rage, and it may well be asked why, if they were so beautiful and so varied, did they go out of fashion and remain practically ignored for so long a period, and why is it that they are now deemed worthy of reinstatement in the popular favour? These queries admit of an easy answer, for, at this early period, the peculiar faculty of sporting had but recently been discovered, and the novelties, though few in number, caught the public taste and led to a demand which new "finds" could not cope with. British Ferns cannot be so rapidly propagated as tender exotics, since they resent heat. The result was that, in order to meet the demand, every plant that was found with some little peculiarity was placed upon the market and purchased for high prices. The seedlings raised from these abnormal forms, instead of being carefully selected on proper lines, were potted up, individually christened, and sold in the same indiscriminate manner, the

* "The Art and Craft of Garden Making," by T. H. Mawson. Third edition. B. T. Batsford, 94, High Holborn, London.

result being that the few fine and symmetrical sports which, at that time, had rewarded the Fern hunter, were absolutely swamped by a swarm of unsymmetrical and defective rogues, which could not possibly retain favour when the craze for novelty was satiated. The inevitable result followed. British Ferns fell from public favour, and only the common or weed forms found places in town gardens as popular representatives of our native Ferns. The British Fern cult, however, survived in the persons of a coterie of enthusiasts, who devoted their leisure to hunting for new varieties, and, having acquired these, to propagating them on selective lines. As time went on the number of these wild Ferns so increased that the process of selection was resorted to. Unsymmetrical or defective varieties would be retained merely as "souvenirs" by the finder, only the choicest being propagated and distributed. Assiduous search brought to light a host of beautiful things far and away surpassing most of the pioneer forms of the "rage" period, and stricter and stricter lines of selection were adopted and adhered to. The result of all this work is that, according to the writer's list in the *Book of British Ferns* (Newnes), some seven hundred choice and distinct varieties are enumerated.

The highly-priced novelty of the early sixties is the rejected rogue of to-day, and to earn the appreciation of the Fern fancier now, symmetry, constancy, and grace must be the qualifications presented in any novelty. Among Fern varieties there are a few, such as the Craigii section of Lady Ferns, which have a tendency to become veritable weeds, their spores being gifted with extra reproductive vigour. The type is erratic in itself, and although it produces a percentage of pretty forms, it also produces a host of mere curiosities. The expert ruthlessly eliminates these, and the nurseryman should do the same, adhering sternly to recognised named varieties. All trade plant exhibitors of these novelties should grow them well and present them at exhibitions in the finest possible condition. In the occasional exhibitions which have been so far made, it has been rare indeed to see a full-grown specimen of a British Fern; the thumb-pot stock plant has been the only "lure," and, naturally, the remark has followed, "British Ferns don't pay." Can this be wondered at? Exotic species are displayed in their full beauty as grand specimens, with foliage piled tier upon tier and in the best possible form. Our native species, given the same chance, could rival the best of them, and, if that chance be given, will hold their own with the best, but not otherwise. *Chas. T. Druery, V.M.H., F.I.S.*

THE PROPAGATOR.

At this season there are many plants which must be increased for next year's flowering, of which the more important are Fuchsias and Zonal Pelargoniums for early stock—the latter in frames or in full sunshine, and the former from half-matured shoots, placed singly in small 60's pots, or to the number of four in larger ones, placing the pots, after affording the sandy soil a good application of water, in a warm house or pit. The cuttings must be shaded from hot sunshine, and the soil and surroundings be kept moderately moist.

Cuttings of the Cape Pelargoniums having scented foliage root readily this month, if half-matured shoots, denuded of the lowermost pair of leaves, be inserted not deeper than 1 inch in sandy soil out-of-doors, or in pots placed in a garden frame facing north, but otherwise exposed to the full light. If the shoots are too soft they will decay instead of forming roots. The foliage of these Cape of Good Hope Pelargoniums is much appreciated in bouquets and when used in filling flower glasses. Every garden should possess a few species, as, for example, *Radula*, *Prince of Orange*, *capitatum*, *graveolens*, *quercifolium*, and *citriodorum*. I must not omit

Fair Helen, Rollisson's Unique, and *erubescens*; this last-named forms a good bedding Pelargonium when two and three-year-old plants are utilised.

Helleborus in variety may now be increased by cutting the thick portions of the roots into pieces 1 to 2 inches in length, and placing these in leaf-soil and sandy loam in pans, which should be stood on a bottom heat of 60° to 70°. The same method may be adopted with *Anemone japonica*, and its single and double-flowered varieties, and *Anemone blanda*.

Clematis Vitalba and other species and varieties are readily propagated from root cuttings during August. When these consist of *C. Vitalba*, they are usually considered to be fit only to serve as stocks on which to graft ennobled varieties, and they are suitable for this purpose when grown to the thickness of a goose-quill. While writing of stocks, it may here be stated that the single red and white-flowered *Camellias* may be struck from half-matured shoots, if placed on a bottom heat of 70°, in a close frame, or in the propagating house. The most expeditious manner is to insert them in a bed of pure sand that is kept moderately moist.

August and September are the most suitable months for striking cuttings of *Callistemon*, *Eucalyptus*, *Eugenia* (*E. australis*, *chinensis*, and *Jambos* may also be rooted in the spring), *Myrtle*, *Melaleuca*, and *Beaufortia*. Of these plants it is advisable to take cuttings from side shoots in the middle of the plants, together with a heel of the older wood. The length of the cuttings should depend on the position of the leaves. The best compost for these cuttings consists of peat one part, and sand two parts. The rooting pans should be well furnished with drainage material in the shape of crocks; a layer of 1½ inch thickness will not be excessive, and over this should be placed a layer of moss. The leaves should be removed for one-third the length of the cutting, which should be inserted to that depth. A bottom heat of 50° Fahr. and much moisture are essential for success. *F. M.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Dendrobiums.—Owing to the lack of sufficient sunshine it has been found next to impossible to maintain such atmospheric temperatures as are generally considered to be necessary for the proper cultivation of those *Dendrobiums* selected for the hottest division; most of these plants are therefore rather late in completing their season's growth. A few of the earliest have reached this stage, and it will be advisable to periodically look over the plants, selecting those which have the terminal leaf at the extremity of the pseudo-bulbs fully expanded, and placing them altogether at one end of the house where more light and air can be admitted, and where their immediate surroundings may easily be kept considerably drier than the other parts in the same house. If a house is devoted entirely to the culture of these plants, no difficulty need be experienced, if the weather is suitable, in securing well-ripened growth, but when a miscellaneous collection of plants is accommodated in the same house, it is difficult to obtain satisfactory results. Those plants which have finished their growths, and are to be grouped together will not require so much water at the root, but they must not be allowed to become very dry, as the roots which commenced to grow early in the season are not only increasing in length, but they are throwing out many lateral rootlets, which should be encouraged to grow. A gradual approach to maturity is always desirable, because the plants will then be the less likely to start into a second growth. After a week or two of such semi-resting treatment in the growing house, the plants may then be removed to a greenhouse where there will be far less shade, and the atmosphere is comparatively cool and dry. They may be placed in a vinery, where it is easy to choose suitable positions, and where the plants will gradually pass from mode-

rate shade into full sunshine, taking care that they are put out of the line of draughts or cold winds. In such houses the pseudo-bulbs quickly become ripened, and when fully exposed to the full glare of the sun, careful judgment should be exercised in watering the plants, affording just sufficient to prevent their roots from decaying, or their pseudo-bulbs from shrivelling. Do not keep the roots in a constantly saturated condition. Therefore, after one thorough watering no more should be applied until the whole compost has become quite dry. Where several plants of any one species or hybrid *Dendrobium* are grown, it seldom happens that all are ready for removal at the same time, and up to the present we have removed the earliest plants of *D. Burfordiense*, *D. Clio*, *D. xanthocentrum*, *D. splendidissimum*, *grandiflorum*, *D. Burberryanum*, *D. rubens*, *grandiflorum*, *D. Juno*, *D. Luna*, *D. Schneiderianum*, *D. melanodiscus*, *D. aureum*, also several *D. nobile* and its varieties. For those plants that are still growing, it is necessary to maintain a warm, moist atmosphere, and to gradually expose them to more light in the mornings, and to remove the shadings a trifle earlier each afternoon. This gradual maturation will prepare the plants to withstand full sunshine almost immediately after the growths are completed.

Seedlings.—All young seedlings that are growing in the warmest house should be placed well up to the roof glass, and be well supplied with moisture until they have finished growth, after which time they may be removed to a light, well-ventilated position, in a temperature similar to that of a Cattleya house, for the winter.

PUBLIC PARKS AND GARDENS.

By W. W. PITTIGREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

Employment of qualified gardeners in public parks.—Visitors to public parks sometimes complain that when they ask attendants the names of trees or other plants they get such evasive or curt replies that they are made to feel as if they were asking impertinent questions. The reason is this, that the majority of men employed in our public parks, not being trained gardeners, are unacquainted with the names of many plants, and rather than confess their ignorance to visitors, they either give a wrong name or burke inquiries by assuming a brusqueness of manner. As the public are undoubtedly entitled to receive all possible benefits from their parks, they should, under reasonable circumstances, be in a position to have the names of most of the plants growing in the larger parks supplied to them if they so wish. While park superintendents never desire to encourage the habit of gossiping between members of the staff and visitors, yet it must certainly add to the dignity of a department, and be to the advantage of the general public to have one or two trained men in a park, who, when called upon, can answer such technical questions as are generally asked by visitors. If this is a good policy to pursue in the case of an ordinary park, it is very much more so in the case of a park claiming a botanical character. In such a place every facility should be given to visitors to obtain reliable information, and some trained men should always be employed upon the working staff. It is to be feared that this is not always the case. A few days ago, when visiting a botanical garden, I was greatly surprised and disappointed to find that it was impossible to rely upon any botanical name furnished by the members of the working staff. This was all the more annoying as the majority of the plant labels were in a dilapidated condition. For the sake of economy, incompetent men are very often employed in the places of qualified gardeners. Although it is admittedly difficult to get the right class of men for such places—men who are thoroughly practical and at the same time acquainted with the botanical names of the plants they deal with—they are to be had when the wages offered are reasonable. Park authorities should endeavour to employ some of the very best type of gardeners by offering them good wages.

THE NOTTINGHAM PARKS.—Mr. W. Parker, for some years gardener at Roundhay Park, Leeds, has been appointed superintendent of the public parks and recreation grounds in Nottingham.

PLANTS UNDER GLASS.

By J. G. WILSON, Gardener to H. J. KING, Esq.,
Eastwell Park, Kent.

Fraxinea ramosa.—This is a useful subject for decorative purposes when grown in small pots, but its full beauty is seen when it is given a fairly large receptacle. We have a number of plants in $7\frac{1}{2}$ -inch pots, and these have developed an immense quantity of bloom, averaging about 18 flower-spikes to each pot. They were raised from seed sown in the spring of 1906, and after the plants were established they were placed outside on a bed of ashes, where they remained until the winter, when they were given the protection of a cold frame. The following spring the plants were again placed in the open, where they remained until the flower-spikes began to develop. At this stage they were placed under glass, and stimulated with occasional applications of manure until the flower-spikes attained their maximum development. A few should be grown in smaller pots, as these will be useful for many purposes of decoration.

Solanum capsicastrum.—Red spider and aphides are great enemies of this plant, especially when planted out. A thorough syringing with clear water every evening will, in most cases, keep down red spider, but if this is not effectual, the plants should be sprayed with a suitable insecticide, especially on the under surfaces of the leaves, where the pest invariably makes its first appearance. For combating aphides use tobacco powder while the plants are in the open, but fumigate them directly they are placed under glass. While they are in the beds, cut around the roots with a sharp spade about a fortnight before it is proposed to shift the plants in order to prepare them for lifting and potting.

The propagating house.—*Oplismenus* (*Panicum*) *Burmianii* variegata should now be propagated. Divide the plants and place the portions in small pots, and, if given a brisk heat in a frame, they will soon form numerous roots, and make useful specimens for edging and other purposes. *Selaginellas* of the compact growing type, and *Zebrinas* (*Tradescantias*) are also much in request for edging purposes. These should be propagated at this season.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq.,
Norwood, Alloa, Clackmannanshire.

The Peach and Nectarine.—As soon as the trees of early varieties have been cleared of their fruits, the borders should be well watered, and the foliage syringed vigorously to destroy any insect pests that may be present on the leaves. All gross-growing shoots and any others that are not required, should be removed. The fruits of later varieties have now finished their stoning. Endeavour to promote healthy foliage by frequent syringings of clear water. Maintain a sufficiency of moisture at the roots, and apply manure water once each week. Remove any leaves that shade the fruits, and place pieces of wooden lath between them and the trellis-work, so as to expose them to the full rays of the sun. Trees with fruits colouring should be allowed a plentiful supply of fresh air about them by day and by night. The foliage should not be syringed after the fruit commences to colour. Secure the fruits to the trellis-work or neighbouring shoots with strands of matting crossed at right angles. Furnish a plentiful supply of moisture at the roots as long as the weather continues hot, and maintain a moist atmosphere by damping the paths and the borders daily. This practice will favour the swelling of the fruits. Guard against the borders becoming dry, or red spider will soon make its appearance.

Cucumbers in frames.—The plants are now at their best condition, and will continue to fruit for some time to come. A suitable degree of warmth may be maintained by removing the outside fermenting material around the frame and renewing it with short grass and stable litter. Guard against over-watering, remembering that Cucumbers planted in manure in frames do not require frequent waterings. Pinch the points of the shoots, and harvest the fruits as soon as they are large enough. Damp the foliage lightly, and close the structure early in the afternoon. Seeds should now be sown for a winter supply of Cucumbers. Place the seeds in thumb pots, filled with fresh loam that has received the addition of a little

sharp sand. Place two seeds in each pot within half an inch of the rim, and then fill the pots with the same soil. Plunge them in a gentle bottom heat and water with tepid water. They will soon germinate, and as soon as the seedlings have developed their first rough leaf, place them separately in $2\frac{1}{2}$ -inch pots, using similar compost as before. Keep them plunged in bottom heat until they have become well rooted, when they should be removed to a shelf near the glass, where they may remain until required for planting in their winter quarters.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to LORD CLINTON, Bicton,
East Devon.

Plums, like other fruits, are ripening but very slowly. Protect them with netting as soon as each variety commences to change colour. This is an easy matter in the case of wall trees, but large pyramids, bush, or standards in the open are more difficult, so that it will be advisable to gather the most forward fruits every few days and place them under glass for a short time if considered necessary. As each tree is relieved of its crop, do not neglect to thoroughly wash the foliage, using quassia extract if there is any visible insect life. "The Czar" is still one of the best Plums to grow for an early crop, good prices being obtainable for the fruits up to the middle of August.

The affording of water.—The frequent showers of late are apt to deceive beginners, but if an examination is made of the soil an inch or two below the surface, it will be found that the rain has not penetrated much and has been of very little help to trees growing on porous ground and against walls. While it may not be good practice to apply water to the roots of trees now affording ripe fruits, it is decidedly bad practice to allow such trees to suffer from drought, and we frequently aid our trees in this manner immediately the ripest fruits have been gathered, finding that there is no deficiency in flavour in the remaining fruits which ripen a few days after such root waterings have been applied. Clear water is used for the purpose, it being inadvisable to apply manure at such a period.

Strawberry plantations.—Continue to remove all runners as fast as they appear; the showery weather is favourable to the growth of plants recently put out, whether they have been previously forced or are young layers. Keep the soil frequently stirred between the plants. Many gardeners adopt the excellent method of setting out a few rows of young plants for the purpose of supplying runners next season, whether for forcing into pots or for forming plantations. Manure and double dig the ground and set out the plants 6 or 8 inches asunder in rows 12 inches apart. All flower spikes must be rigorously plucked out throughout the season.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow,
Cornwall.

Layering shrubs.—Many hardy and half-hardy shrubs, of such plants as Magnolias, Azaleas, and Rhododendrons, and which are with difficulty increased from cuttings, may be propagated readily by layering. Branches that are near to the ground should be selected for the purpose, and of the ten or more methods of preparing the shoot, those of tongueing, notching, and ringing are the best. Before preparing the shoot, the soil around the plant should be lightly broken up with a fork, and in most cases it is advisable to add some fresh soil. The layering of shrubs by a "tongue" cut is very similar to the layering of Carnations by this method, except that it is on a larger scale. The portion of the stem to be inserted in the soil should be cleared of its leaves, and be cut in a slanting direction towards the point of the branch on its under side. The shoot must be pegged firmly into the soil, care being taken to see that the "tongue" is kept open. Notching and ringing differ only from tongueing in that in the former method a notch is cut out of the under side of the branch, and in the latter method a ring of bark is cut away. The layers should be securely tied to stakes, and the soil in which the shoots are inserted must be kept in a moist condition.

A few varieties of shrubs form roots quickly, but many require to remain attached to the parent for a year, and some for two years.

Hydrangeas and Shrubby Verbenas.—These shrubs will survive the cold of an average winter, but, as a precaution, surplus plants should be provided. Cuttings inserted at this date, and housed in a close pit, root readily. Another plan is to pot small plants a month or so hence, and winter them under cover in case an exceptionally severe winter should injure the outdoor specimens.

Sweet Peas.—Plants raised from seed sown in the open in autumn, form strong, early-flowering stock, and in districts where the winters are mild, this system of cultivating Sweet Peas is worth a trial. The time for sowing will vary in different localities from now onwards until the third week in September. The soil should be made very firm for sowing, and after the seedlings are above ground they should be afforded small sticks, and have the soil drawn up about their stems.

The herbaceous border.—As the early-flowering plants ripen their foliage, they should have the withered and decaying leaves removed, but care must be taken not to injure the new crowns at the base of the stems. The shoots of Dahlias, and most other autumn-flowering plants, are gross and sappy this year, and they need extra care in tying and staking. Seeds of desirable flowers should be gathered as soon as they are ripe, and when the seed-receptacles are perfectly dry. Many biennials which ripen their seeds by the third week in September may be sown as soon as they are gathered; those which ripen later than this period are, as a rule, best sown in the following May.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq.,
Cobham Park, Surrey.

Cauliflowers.—In late districts where these can be provided with suitable protection in the winter, such as that afforded by an unheated frame, or a shelf in ainery containing late-fruiting Grapes, or in a Peach house, seeds may be sown now on a warm border. In warmer and earlier districts the sowing may be delayed until the last days of August, making another sowing in September. It is excellent practice to make two sowings, allowing an interval of about a fortnight between them. Prepare the ground by applying a good dressing of slacked lime and well-decayed manure. As soon as the young plants are large enough, they should be pricked out into their winter quarters. After that has been done, it will be necessary to afford air liberally, to keep the plants as sturdy and as hardy as possible. Plants of this description will be better able to stand through the winter, and will not be likely to suffer a severe check when planted out in spring. The variety Early London answers well for these sowings, and should be followed early in the New Year by Magnum Bonum.

Onions.—The crop raised from seeds that were sown last August will now require lifting, and although these will not be stored for any great length of time, they should be allowed to remain on the ground for a few days after lifting, so that the full exposure to sun and air given them may thoroughly ripen and mature them. It is now necessary to twist the tops of the spring-sown Onions, as was previously advised for the autumn-sown crop. This should be done two or three weeks before it is intended to lift the bulbs, and as these are required to keep well through the winter, a little extra time and care bestowed on them will be well repaid. These bulbs should eventually be stored in a light, well-ventilated storehouse, and if care is taken with them in all details, the bulbs will be sure to winter well.

Spinach for consumption in winter.—The ground for this crop should be well prepared, and the seeds sown in drills drawn at distances of 9 inches apart. It is usual to confine this sowing to the winter or prickly variety, but the round or summer type should not be despised, for this will often, to say the least of it, succeed equally well. The prickly type often stands better through the heat of summer than the smooth varieties, and those who have not reversed the usual practice are strongly advised to do so experimentally.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, AUGUST 24—

Co-operative Flower Show at the Crystal Palace.

WEDNESDAY, AUGUST 28—

Derby Agricultural and Horticultural Sh. (2 days).

THURSDAY, AUGUST 29—Sandy (Beds) Fl. Sh.

FRIDAY, AUGUST 30—East Kilbride Fl. Sh.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—60°4'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, August 21 (6 P.M.): Max. 64°; Min. 49°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, August 22 (10 A.M.): Bar. 30.3. Temp. 64°; Weather—Fine with occasional sunshine.

PROVINCES.—Wednesday, August 21 (6 P.M.): Max. 60°, Colchester; Min. 56°, Lincoln.

SALES FOR THE ENSUING WEEK.

MONDAY, WEDNESDAY, THURSDAY & FRIDAY—

Trade Sales of Dutch Bulbs, at 67 & 68, Cheapside, London, E.C., by Protheroe & Morris, at 10.

WEDNESDAY—

Lilium Harrisii, Roman Hyacinths, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 2.

The Bordeaux mixture is perhaps more often recommended for the treatment of plant diseases than any other known remedy. The formula for mixing it has been printed again and again in these pages and elsewhere, yet we frequently receive enquiries from correspondents as to the proper ingredients to use and the proportions in which they should be employed. The following contribution on the chemistry of the subject, obligingly sent us by Mr. Spencer Pickering, cannot fail to be of interest to our readers:—

The statement generally made as to the nature of Bordeaux mixture is that it consists of copper hydroxide; yet a slight knowledge of the properties of this substance would show that such a statement must be incorrect, and that if such were the compound present in the mixture, it would have no fungicidal action, as the hydroxide is insoluble. A sounder explanation is that a basic sulphate of copper is the essential substance present, and that this is gradually decomposed by the carbonic acid of the air, forming copper carbonate and copper sulphate, which latter is the active fungicide. It is only when thus liberated gradually and in minute quantities that copper sulphate will not scorch the foliage, and even when thus liberated, it will still sometimes result in scorching under certain weather conditions. It has also been established that the liberation of the copper sulphate, and, consequently, the fungicidal action, does not begin till some time after the application of the mixture.

This is often a serious disadvantage, and one which must in any case entail loss, for much of the mixture may be washed off before it begins to become effective.

The chemistry of Bordeaux mixture has engaged my attention lately, and it has been ascertained that five different complex substances may be formed when lime acts on copper sulphate, the particular one formed depending on the proportions used. In making Bordeaux mixture according to the ordinary formulæ, where the weight of lime used is from four to six parts to every six parts of crystallised sulphate, the substance formed is a double basic sulphate of copper and calcium, represented by $10 \text{ Cu O}, \text{ SO}_3, 4 \text{ Ca O}, \text{ SO}_3$: where, however, the lime is reduced to the lowest proportions consistent with the precipitation of the whole of the copper, the substance formed is essentially a basic sulphate of copper of the formula $4 \text{ Cu O}, \text{ SO}_3$. In the former case, when the substance is exposed to air, the basic calcium sulphate present in it will be attacked first by the carbonic acid, and till all this has been converted into carbonate, the basic copper sulphate will remain practically intact. This explains the period of incubation noticed before the fungicidal action commences. If, however, the copper salt present is $4 \text{ Cu O}, \text{ SO}_3$, there will be no such delay, for it contains no basic calcium sulphate. This will be a great gain, but there will be a greater one still; for the second compound will, for equal weights of copper taken, liberate two-and-a-half times as much copper sulphate as will the first compound; in other words, we can make with it a Bordeaux mixture as effective as that ordinarily used, at only two-fifths of the cost. This is an important consideration when dealing with an expensive material such as copper sulphate.

The object to be aimed at, therefore, is to use as little lime as possible to precipitate all the copper; and, to do this, it is necessary to use something more definite in composition than the milk of lime ordinarily used. A clear solution of lime, i.e., lime-water, will supply this want, and, fortunately, lime dissolves in water to just the right extent to make a Bordeaux mixture of the usual strength. For what is known in America as the "normal," or "1.6" mixture, 16 lbs. of copper sulphate are taken to make 100 gallons of the wash: for 100 gallons of a wash of the same effective strength it will be necessary to take only 6 lbs. 5 oz. of the sulphate when made in the following manner:—

Take this weight of copper sulphate and dissolve it in 2 or 3 gallons of water, which is best done by suspending it in a piece of sacking in water contained in a wooden tub; zinc or iron vessels must not be used. Take 2 or 3 lbs. of fresh lime, slake it with a little water, and put it into a tub with about 120 gallons of soft water; stir this occasionally, and then leave it to settle. If left overnight, the tub should be covered. It is only the clear liquid which should be used; of this, 86 gallons are drawn off and mixed with the copper sulphate. If exactly the "normal" strength is required, the whole may be made up to 100 gallons by adding 11 to 12 gallons of soft water; if a less strength is required, more water may be added; and, if a greater, then some of the clear liquid may be run off

from the mixture after it has been left to settle. The proportions above mentioned represent 107 pints of lime-water to each pound of copper sulphate, or 134 oz. to each ounce.

However the Bordeaux mixture may be made, the testing of the liquid to make sure that all the copper has been precipitated should never be omitted. This testing is especially necessary in the present case. It is done best by putting into a white saucer some water with a little solution of potassium ferrocyanide added, and dropping into this a few drops of the clear liquid obtained on allowing the Bordeaux mixture to settle. If any brown colour appears, copper is still present, and more lime must be added till the liquid, on testing, shows no change of colour whatever. The strength of lime-water, even when perfectly made, varies somewhat with the temperature, so the amount required for a given weight of copper sulphate will not always be quite the same. But any extra amount which is required should be added very cautiously, for any excess above the minimum amount means so much loss of efficiency and waste of money. The idea that an excess of lime will prevent the tendency to scorch is a mere fallacy. The scorching and the fungicidal action are both due to the copper sulphate liberated; if we do away with the one, we do away with the other also. Excess of lime, unless very great, will not prevent the eventual liberation of copper sulphate; it will only retard it, and cause unnecessary loss.

Doing away with the presence of excess of solid lime, by using lime-water instead of milk of lime, presents several further advantages. Milk of lime will always contain gross particles which wear and clog the nozzles of the machines, and which are easily knocked off the leaves, carrying much of the copper salt with them, and thus entailing loss. Their presence, also, renders the precipitate more compact, and necessitates more agitation of the liquid during use. The basic sulphate made, as here recommended, by lime-water, is in an extremely fine state of division; the particles of it are so small that they can hardly be resolved under the highest power of the best microscope. An even finer compound can be obtained, and one which is much more bulky and settles much more slowly, by using 92 gallons of lime-water, instead of the 86 gallons above recommended; but this compound would have only four-fifths of the efficiency of the other.

The improvement and cheapening of the Bordeaux mixture here suggested has been the outcome of a purely scientific and laboratory investigation of a chemical character; but no doubts need be entertained as to its practical application, for a mixture made in exactly the same way (with lime-water), and of the same strength, was recommended by Prof. Cavazza in 1886, and has been in general use in Italy, with excellent results, ever since.

OUR SUPPLEMENTARY ILLUSTRATION has been prepared from specimens kindly sent us by M. DENIS, Balaruc les Bains, Hérault, France, who, believing his plant to be distinct from *C. sulphureus*, considered it a variety of some other named species, or a hybrid. Our correspondent has it under the name *C. "Klondyke,"* and describes it as having been introduced



VIEW IN THE FERNERY AT SHIPLEY HALL, DERBY, THE RESIDENCE OF
E. MILLER MUNDY, ESQ.

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about eight years ago, its exact origin being unknown to M. DENIS, who goes on to say that "the plant is rare in cultivation, doubtless because of the difficulty of obtaining good seed. It is easy to surmount this obstacle by sowing seeds earlier than the other varieties of *Cosmos* are usually sown. By sowing seeds under glass on February 15, seedlings were raised which were put into the open ground in April. These soon flowered, and yielded an abundance of good seed. The plants reached nearly 18 inches in height, and mostly died during the summer. Those which survived formed exuberant growth by autumn, being nearly 4 feet in height. Not the second bloom was not until October, and early frosts killed the plants before they had yielded a second crop of seed." After examining the specimens at Kew in comparison with specimens already in the Herbarium, they were found to answer exactly to *C. sulphureus*, of which species Mr. S. A. SKAN kindly sends us the following note:—"Though by no means a novelty, this plant does not appear to be often seen in gardens, possibly because of its late flowering season, and therefore its liability to be killed prematurely by autumn frosts. Its reputation may have also suffered through the substitution for it of an inferior plant, *Bidens ferulæfolia*, which has been distributed by some seedsmen under the name of *Cosmos sulphureus*. The latter species is a much finer plant, and may be easily distinguished from the *Bidens* by its long-beaked fruits. The *Cosmos* has its headquarters in Mexico, and it is found also in New Orleans. Cavanilles (*Icones*, vol. i., p. 56, t. 79) first described and figured this species about the year 1791, from a plant found growing in the Royal Garden at Madrid. About the same time, Jacquin (*Collect. Suppl.*, p. 155, and *Icones Plant. Rar.*, t. 595) described and figured it under the name of *Coreopsis artemisiæfolia*, the plant, presumably, being then in cultivation in Austria. It is a much branched, more or less pubescent, annual, 4 to 8 feet high; leaves bipinnate or tri-pinnate, 12 inches long or sometimes more; pinnæ alternate or opposite, two or three-toothed, or entire, acute or acuminate; peduncles $3\frac{1}{2}$ to 10 inches long, naked; flower-heads 2 to 3 inches across, from a sulphur-yellow to a deep orange colour; ray-florets usually 8, obovate, often three-toothed at the apex; achenes linear, $\frac{3}{4}$ to 1 inch long, including the long, slender beak. Dr. J. N. ROSE, in *Garden and Forest*, 1895, p. 484, states that the plant has been in cultivation in the greenhouses of the United States Department of Agriculture, Washington, and in his own garden, since 1892, and though very attractive when in bloom, it is too tender there to withstand the autumn frosts. He recommends that the plants be forwarded as much as possible early in the season by starting the seeds in a cold frame or greenhouse, and, further, that plants be placed under glass in the autumn, when they will soon begin to flower, and will continue in the flowering state for a long time. In a wild state the plant grows in the rich soil along creek-bottoms."

THE BOTANICAL GARDEN, NEW YORK.—An idea of the enormous growth of New York, the second largest city in the world, with its 4,000,000 of inhabitants, is obtained from the Bronx suburb, which is readily reached by two elevated railways, and lies to the north of the city. This terrain, 20 years ago, was as difficult to reach as Philadelphia, and possessed a population of about 30,000 persons, distributed over an area of 917 square miles. There were but few good houses, and these chiefly summer villas scattered about in a wilderness of luxuriant-growing deciduous trees. The rest were huts inhabited chiefly by criminals. To-day the Bronx is one of the finest parts of New York, and the inhabitants number 400,000. Its

most noteworthy feature is the Bronx Park which nature and art have united in forming into a charming idyll for the lover of nature. It is laid out in the English style, and contains a zoological and a botanical garden, provided with glasshouses; and a museum. A striking peculiarity of the place, due to climatic conditions, and the composition of the soil, which is rich in silicic acid, is the luxuriant foliage of trees, shrubs, and vegetation in general, and the poor floral development. Compared with the maritime climate of western Europe, the American seaboard shows important differences, and at certain seasons is not particularly favourable to vegetation. There is constant change, and the differences between the temperature in winter and summer are great. The foliage remains on the trees for a long time, often till late in November, a feature of the so-called "Indian summer." Vegetation, however, is greatly delayed in the spring, and often it is the first week in May before a green leaf is seen. Hail storms and long continued rains seldom occur. The botanical museum building consists of four stories, the lower one contains the lecture hall, constructed after the European university model; adjoining this are halls for exhibitions especially fitted up for tropical plants. The actual museum is found on the first floor. The interior is reminiscent in its decorations of the Carrara marble of a Grecian temple. Glass cases contain an enormous collection of all classes and genera of the vegetable kingdom, besides Cryptogamic plants, such as Fungi, Algæ, Lichens, &c., and specimens of timbers, wax models of plant diseases, together with photographs of the same. A large herbarium is situated on the second floor, and on the top storey there is found a very comprehensive library, lighted by a gigantic glass dome. Workrooms for botanical research about on the library. The various officials and the director of the botanical garden, Dr. N. L. BRITTON, are provided with offices in the Museum. The glasshouses, constructed by Messrs. LORD & BURNHAM, cost 225,000 dollars. They face to the museum building, and exhibit the latest improvements in glasshouse construction and fittings. They form three sides of a square, one long side being left open, and consist of five domed houses and six span-roofed connecting houses. The area covered amounts to 47,000 square feet, and the glazing is done on the single-pane plan. The heating apparatus consists of a number of "radiators" constructed in every case of 3-inch pipes, placed together to the number of 20, and the heating power is steam obtained from eight boilers having an expansion power of 80 h. p. A great advantage found in this system of heating is that any repairs needed can be carried out by the garden staff of artificers, and a burst steam pipe can be removed and another inserted without much trouble in two hours. The ventilation is self-regulating and is effected by hydraulic pressure, acting by means of a thermostat. This method saves all the labour usually required by other methods. An interesting article, containing the foregoing particulars, was published in *Die Gartenwelt* for July 20, 1907.

COMARELLA MULTIFOLIATA.—In this Rosaceous plant, collected in the San Francisco mountains, and introduced by C. A. PURPUS about four years since under the name of *Ivesia Purpusii*, we have an interesting subject for the rock-garden. The leaves, 5-7 inches long, are very small, and formed of feather-like leaflets arranged in close order, giving the plant the appearance of a Fern. The plant is comparatively widespread in the higher regions of the San Francisco mountains, and usually in dry, sunny positions, a fact which indicates the best place for it on a rockery. The reddish-brown blossoms are inconspicuous, and the value of the plant as an ornament lies in its pretty foliage. The true *Ivesia Purpusii* stands botanically very close to *Comarella*, but differs

essentially from it. *Ivesias* are difficult of cultivation, whereas *Comarella* is readily grown. J. A. Purpus in *Müller's Deutsche Gärtner-Zeitung*.

CELEBRATIONS AT THE BRAISWICK NURSERY, COLCHESTER.—On the 8th inst., the staff at this nursery was entertained by Messrs. F. CANT & Co. at dinner, to celebrate the coming of age of Mr. SIDNEY CANT. During the evening an interesting presentation was made to Mr. SIDNEY CANT on behalf of the employees.

FORESTRY AT CAMBRIDGE.—The importance of Forestry as a branch of knowledge and as a field for research is engaging the attention of the authorities of Cambridge University. A post of Readership in Forestry has been established, and the appointment has been awarded to Dr. AUGUSTINE HENRY, whose contributions to horticulture, and to botanical science are well known to our readers. Since his return from China, Dr. HENRY has devoted much attention to arboriculture, and has visited the United States, Canada, Spain, Algeria, Corsica, and Italy for the purpose of studying tree growth in those countries.

AMERICAN SEED TRADE ASSOCIATION.—At the annual convention of the American Seed Trade Association, held recently in New York, the President, Mr. HENRY W. WOOD, said that the past season was the most prosperous the seedsmen had experienced, and the outlook for the future was a bright one. In speaking of the general work of the association, he recommended agitation on the tariff question for the reduction of duty on such seeds as cannot be raised in the United States. Amongst other matters of general importance to the trade is pure seed legislation, postal packet rates, telegraph and cable code of the association, and the society's efforts in the fight against the free distribution of seeds, the results of which, thus far, have been discouraging. Dr. GALLOWAY, in a subsequent paper on "What the Department of Agriculture is Doing for the Seed Trade," made mention of the breeding of various grasses, forage plants, vegetables, &c., now being done by experts under Government direction. Mr. GALLOWAY's address will be published shortly with illustrations. Dr. W. W. TRACEY, in an address on "The Seed Trade of the Past 25 Years," alluded to the growth and prosperity of the population, which have resulted in a vast increase in the bulk of seed sold. The relative quantity of American-grown seed was constantly increasing, and the imported seed was only purchased when there was a short supply or the price of foreign seed was lower. Much of the imported seed was of poor germinating quality, and instances were given in which 60 per cent. would not grow. Dr. TRACEY made mention of the common practice of making seed-saving a side product of some other industry. The fruit from which a large proportion of the Tomato seed is taken is utilised for canning or for the making of catsup, and quite a proportion of the Sweet Corn, Peas, Beans, &c., come from fields which were primarily planted for the canning industry, but in which the fruit got too old to use for this purpose, and so was allowed to ripen for seed. In the same way Cucumbers, Melons, &c., planted with the intention of selling the fruit, were allowed to ripen. The practice was a dangerous one, and often resulted in seed which, because of being a mixture, is most undesirable. There has been a decided increase in varietal names, and a comparison was made of lists issued 25 years ago with those of the present day. The average of five leading trade lists in 1882 was 551; whilst in 1907 the aggregate was 689 names, 433 being new. In the lists of 196 leading seedsmen, Tomato seed was offered under 248 different varietal names, 118 of which were offered by a single firm. Yet all could be easily classed under fewer than a score of different types.

VIOLA TRIALS IN THE QUEEN'S PARK, GLASGOW.—The second and final inspection of a trial of Violas (see p. 91) conducted in this park took place on the 14th inst. Four Silver Medals were offered by the Scottish Pansy and Viola Association for the best varieties having blue, white, and yellow flowers, and also for the best variety of any other colour than these. First-Class Certificates were awarded to varieties receiving 36 or more points at either of the inspections. In arriving at their decisions the judges were influenced by the value of the variety for bedding purposes. The following varieties were awarded the medals:—Yellow, Red Braes, from Messrs. JAMES GRIEVE & SON, Edinburgh, with 68 points out of a possible 96; Blue, Ithuriel, from Mr. MICHAEL CUTHBERTSON, Rothesay, 52 points; White, E. C. Barlow, 52 points, from Mr. JOHN SMELLIE, Busby. "Any other colour," Kitty Bell, a variety having lavender-coloured flowers, 60 points, from Mr. CUTHBERTSON. Only three plants were awarded First-Class Certificates, viz.: J. H. Watson, a striped flower, from Mr. JOHNSTON, Bearsden; Red Braes and Kitty Bell.

MARKET NOTES.

Tomato Sunrise.—This variety is finding favour with market-growers, and I recently saw fruits packed for market at the Finchley Nurseries. Mr. Frampton, the manager, informed me the crop is all best quality fruits, which are of a uniform size. The prospects of the out-door Tomato crop are poor, even in the Worthing district, but the season promises good returns for those growers who have crops under glass.

Tomatos in unheated houses.—The fruits should be fairly ripe when gathered, as they are slow to colour after picking. Tomatos have been realising 4s. 6d. per 12 lbs. during the past week. Comet succeeds well under the cold-house treatment, and the crop of this variety now being harvested is most promising.

Price of fuel.—The high price of fuel will be a serious item this winter. I have knowledge of a contract for 1,000 tons of anthracite coal at an increased price of 5s. 3d. per ton over that of last year. Contracts for coke cannot be made for any length of time in advance. Assuming the value of anthracite coal to be 24s., and coke 18s. per ton, it is indeed a serious matter for all, but more especially for the smaller growers.

Canon Hall Grape.—The mid-season crops of this Grape, or those that will be harvested by January, are doing well. Shanking is not much in evidence, owing to the wood having been well ripened last autumn. The season so far has been suitable for Canon Hall Muscat, and will be quite satisfactory if the wood ripens well. This fine Grape appears to succeed equally as well on the stiff Middlesex soil as on the lighter soils of the Worthing district.

A disease-resisting Cucumber.—The variety known as "Butcher's Disease-resisting" is rightly named. I have seen plants of this Cucumber free from disease and bearing a prolific crop, while plants in other houses planted and treated in the same manner had to be destroyed owing to the presence of disease. Market-growers will do well to give this variety a trial. *Stephen Castle.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

HYDRANGEA HORTENSIA AT BOUGHTON PARK.—During a recent visit to this establishment I noticed well-cultivated plants of *Hydrangea Hortensia* growing in tubs on the terrace. The plants measured 8 feet in height and 6 feet through, and each was carrying 100 fully-expanded inflorescences; there being others in the bud state. The plants are given the protection of a greenhouse in winter. When growth commences in the spring-time they are afforded a top-dressing consisting of a mixture of good loam, leaf soil, and artificial manure. *A. R. Pearce, The Gabies, Kenilworth.*

THE CROWN PEA.—I was much interested in the illustration of this plant on p. 120. About 50 years ago I received seeds of it under the name of *Pisum coronatum* from, I believe, Mr. W. Hamilton, seedsman, Cheapside, London. There are two varieties of the Mummy or Crown Pea, the one with flowers of the same colour as the field Pea,

and the other white. I have never seen seeds offered for sale in any nurseryman's or seedsman's catalogue. Another interesting Pea, and one of which I am anxious to acquire seeds, is the white variety of *L. tingitanus*; this seems to be very little known. No doubt it exists in some old gardens. *Justus Corderoy.*

QUESTION NIGHT AT DEBATING SOCIETIES.—Committees of gardeners' mutual improvement societies often find a difficulty in providing fresh subjects and lecturers at their meetings. This difficulty has presented itself in Kingston, where lecturers are no more plentiful than elsewhere, and, as an experiment, one evening in the first half of the winter session has been set apart as a "Question night." Members will be invited to write legibly on strips of paper anonymous questions on subjects of gardening interest. These are to be handed to the chairman, who will present each separately to the members and invite a reply. Should no one volunteer to do so the chairman must do his best to provide a reply. It is hoped that in this way many subjects of general interest to members will be elucidated. *A. D.*

Buddleia Colvillei.—This Sikkim species also flowered in these gardens for the first time in June, 1906. Two plants have also flowered with us this season. The one is a bush-trained specimen in a perfectly open position, and one that is much exposed to cold winds. The weather during the past winter and spring has been exceptionally severe around Edinburgh, but all our plants of *Buddleia Colvillei* have proved perfectly hardy, and show no signs of injury by frost. A plant trained against a north-east wall has grown freely, but has not yet flowered. Our bush-plant, however, was only about 4 feet in height when it first flowered. I notice that on certain of the inflorescences the lower flowers only of the panicle have developed. In the *Gardeners' Chronicle*, August 13, 1892, p. 187, is an excellent illustration of this species, but the figure differs from any specimens I have seen in that the flowers are shown arising half-way between the internodes, whereas I have seen them as axillary only. Probably this arises from a very robust growing specimen being illustrated. The flowers that developed here were very much darker in colour than those illustrated in the *Botanical Magazine*, t. 7749. This beautiful species was, I believe, first flowered in Scotland some four or five years since in the gardens of O. H. Mackenzie, Esq., Inverewe House, Ross-shire. *W. Smith, Royal Botanic Garden, Edinburgh.*

CHRYSANTHEMUMS IN THE PRESENT SEASON.—The cold, wet weather of summer has not been altogether favourable to the Chrysanthemum. It is possible that some varieties, which generally produce their best flowers from the second bud, will this year give better results from their first buds, especially in the case of plants that were late in starting into growth. The plants will not be benefited by heavy feeding until they are under cover, owing to the excessive rainfall. Those persons who have light, cool houses at their disposal may find it advantageous to place choice and delicate varieties under glass soon, unless there is a great improvement in the weather during September. *A. J. Long, Wyfold Court Gardens.*

SUMMER PRUNING OF FRUIT TREES.—I enclose three shoots of last year's growth—one of Pear and two of Apple—showing the effect of last summer's pruning as practised in Mr. E. A. Wilson's garden, Rockingham, Edgbaston Park Road, Birmingham. You will observe that the Keswick Codlin Apple and Williams' Bon Chrétien Pear were enabled last autumn to so mature many of the buds that they formed fruit-buds, whilst those that have not fruited will certainly do so next season. The shoot of Cellini Pippin shows what usually takes place on many of the varieties of Apples and Pears that have been summer pruned at the proper time. It has produced a few fruits at the upper end, whilst the buds below have developed into fruit-bearing buds, and with little or no superfluous side growths that many of your correspondents complain of. The current year's growth is poor and weakly owing to a lack of sunshine, and to all appearances these growths will not be ready for summer pruning until later in the season. In the Warwick Castle collection of Apples staged at the Royal Horticultural Society's Apple Congress (1888) many of the best fruits were from the previous year's wood. At Ragley Hall the best samples of Keswick Codlin, Lord Derby, Wor-

cester Pearmain, and Stirling Castle were, with few exceptions, obtained from the previous year's growths that had been summer pruned. The tables on pp. 400-403 in the issue for June 22 should be of much service to all interested in summer pruning. By reading very carefully the various reports, one lesson can be learned, viz., that one's faculties for observation and discrimination should be brought to bear upon this subject, for many persons seem to regard summer pruning as a matter of form. My experience is that all fruit trees require both summer and winter pruning to yield the best results. Trees properly treated from the commencement will not require much pruning at either season. The most suitable time for summer pruning and the mode of performing it is ruled by many circumstances. Every variety of fruit tree has a habit of growth peculiar to itself, and this varies with cultivation, soil, situation, temperature, &c. *A. D. Christie, Rockingham Gardens, Edgbaston Park Road, Birmingham.*

ASTILBE DAVIDII.—This plant has now been in cultivation long enough for its value in the garden to be tested. Personally, I must confess to disappointment in what I had hoped would prove a fine addition to gardens. It grows more luxuriantly each successive year, and has an excellent habit of growth, but the colour of its flowers turns to an inky shade in a very few days after the flowers open. We purchased six plants, one of which never grew. The other five have grown well. Two of them are of a dull red purple. The first one was of a rosy-pink shade, such as the form which was first exhibited, and much about the shade of the old *Spiraea venustum*. Of the remaining two plants, one is pale rose and the other not a good shade of rosy-purple. Probably, had all been like the one I call rosy-pink, this note would not have been written. It seems a pity that the poorly-coloured forms should be distributed. The spikes grow to a height of 5 feet to 5 feet 6 inches here, and the actual length of the flowering spike is at least 3 feet. The side spray, like the central spike, grows very upright, so that the maximum diameter of the flowering portion does not much exceed 5 inches. The flowers are slow to open, and are borne over a period of about five weeks, commencing in August, but the inky tinge acquired by the earlier flowers spoil what otherwise would be a fine splash of colour. Like most plants of its kind, it revels in a good supply of water, and succeeds best in swampy ground or by a pond which is allowed to overflow its banks frequently. *J. C. Tallack, Dobhysire.*

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 20.—The exhibition on Tuesday last at the Hall in Vincent Square, Westminster, was again very small, and the attendance of visitors meagre. There were fewer entries for Orchids, and the ORCHID COMMITTEE recommended only one Award of Merit and one Botanical Certificate.

The FLORAL COMMITTEE had several meritorious exhibits to inspect, notably a display of Gladioli, and a representative collection of hardy annuals. This Committee granted an Award of Merit to a large-flowered strain of *Streptocarpus* and a Botanical Certificate to a species of *Rubus*.

The FRUIT AND VEGETABLE COMMITTEE conferred Awards of Merit on two varieties of Melons, and a Potato, all of which had been grown under trial at Wisley. Two meritorious collections of fruit trees in pots, notably one of Apricots, formed the principal exhibits brought to the notice of this Committee.

At the afternoon meeting 16 new Fellows were elected, and a lecture on "Terrace-garden Plants," illustrated by lantern slides, by Mr. JAMES HUDSON, of Gunnersbury House Gardens, was read by the Secretary.

Floral Committee.

Present: W. Marshall, Esq. (in the chair); and Messrs. H. B. May, Jas. Walker, T. W. Turner, Chas. E. Pearson, J. H. Barr, G. Reuthe, W. P. Thomson, W. Howe, E. H. Jenkins, Geo. Nicholson, Jas. Hudson, R. Hooper Pearson, and George Gordon.

Messrs. H. B. MAY & SONS, Edmonton, showed a number of varieties of *Campanula*

isophylla as small pot plants, all of which were covered with their pretty bell-shaped flowers in blue and white colours: the varieties included Mayii, alba and superba. The taller *C. pyramidalis* was also exhibited in both the blue and the white varieties. The group included well-grown plants of *Ixoras*, *Vallota purpurea*, greenhouse *Veronicas*, and flowers of *Lapageria*, including the large-flowering Nash Court variety. Several choice Ferns were interspersed amongst the flowering plants. (Silver Flora Medal.)

Mr. A. Bullock, gardener to E. WYTHES, Esq., Copped Hall, Epping, Essex, showed a group of *Ixoras* in variety. The plants exhibited good culture and were very freely flowered. (Silver Banksian Medal.)

Messrs. PAUL & SON, Old Nurseries, Chess-hunt, Herts, staged a collection of Roses of such varieties as Dean Hole, Le Progrès, Hugh Dickson, George Laing Paul, The Dandy and Farbenkonigen. Sprays of the interesting *Rosa sericea pteracantha* with its dark-red spines, and of *Tamarisk hispida æstivalis*, were also seen in this exhibit. (Bronze Flora Medal.)

Mr. GEORGE PRINCE, Longworth, Berkshire, displayed cut blooms of Roses of suitable garden varieties, and a seedling named after Mrs. Longworth, with striped petals, that are similar in marking to those of the old York and Lancaster. (Silver Banksian Medal.)

Messrs. KELWAY & SON, Langport, Somerset, again exhibited a large collection of Gladioli. The varieties were more numerous than in their exhibit at the last meeting, and they occupied the whole of a table at the end of the building opposite the clock. Some of the finer spikes shown were those labelled Lord Milner (reddish-orange with a yellow lip), Lady Peyton (scarlet), Crown Princess of Sweden (salmon), Dovedale (white, with spots of rose colour in the throat), Lady Macdonald (purple), Edward VII., Brooklands, Golden Sword (yellow), and Glory of Huish. (Silver-Gilt Flora Medal.)

Messrs. W. BULL & SONS, King's Road, Chelsea, displayed an interesting collection of economic plants, many of which were of medicinal value. There were about 60 varieties of such plants as the Olive, *Olea fragrans*, *Cinnamomum zeylanicum*, *Kickxia africana* (from which is produced Lagoon rubber), *Saccharum officinarum*, the Sugar Cane, &c. (Silver Banksian Medal.)

Mr. A. LL. GWILLIM, Cambria Nursery, New Eltham, Kent, showed flowers of tuberous-rooting Begonias of both single and double-flowering varieties. We also noticed some of the "crested" type. The shades of yellow, scarlet, pink, &c., were very beautiful, and the exhibit represented a fine strain of these useful bedding plants. (Silver Flora Medal.)

Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, staged a group of hardy flowering shrubs and tall-growing herbaceous plants. *Artemisia lactiflora* has numerous inflorescences of cream-coloured flowers; *Eucryphia pinnatifolia* is a handsome shrub that bears numerous large white flowers; *Pavia macrostachya* has tall inflorescences; *Sambucus racemosa* develops large umbels of fragrant flowers; *Berberis hakeoides* is an ornamental shrub when in fruit. We also noticed *Buddleia variabilis magnifica*, *Astilbe Davidii*, *Serratula atriplicifolia*, *Senecio Veitchianus*, hardy Heaths, &c. (Silver-Gilt Flora Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, showed an interesting collection of hardy annuals, interspersed with a few showy border flowers. Varieties of *Helichrysum bracteatum* were very pretty, also *Centaurea "Bridesmaid,"* *Salpiglossis* in variety, *Alonsoa mutisi*, *Phlox Drummondii*, *Zinnias*, *Marigolds*, *Calliopsis atrosanguinea*, *Scabiosa grandiflora*, *Viscaria cœrulea*, *Clarkia pulchella*, *Godetia grandiflora*, and many others. (Silver-Gilt Banksian Medal.)

Messrs. ARTHUR CHARLTON & SONS, Summer-vale Nursery, Eridge Road, Tunbridge Wells, Kent, showed a fine collection of seasonable hardy flowers, including choice varieties of *Gail-lardias*, *Phloxes*, *Veronicas*, *Pentstemons*, *Gladioli*, *Verbenas*, *Liliums*, *Statice*, *Coreopsis*, &c. (Silver Banksian Medal.)

Mr. GEO. REUTHE, Keston, Kent, showed interesting Alpine and hardy plants. *Lysimachia Henryi* is a dwarf species, with relatively large, yellow flowers; *Hypericum cuneatum* is another dwarf plant, the flower-buds are red, but the

petals when expanded are yellow. *Samolus rupestris*, *Tamarisk hispida æstivalis*, herbaceous *Phloxes*, and many other pleasing plants were seen in this exhibit.

Messrs. T. S. WARE, LTD., Ware's Nursery, Feltham, Middlesex, exhibited an assortment of hardy flowers. *Pentstemons* were shown in many fine varieties, also herbaceous *Phloxes*, *Tritomas*, *Chrysanthemum maximum*, *Dendromecon rigidum*, &c., and the whole was relieved with light sprays of *Statice*, *Grasses*, and *Bamboos*. (Bronze Flora Medal.)

Messrs. J. CHEAL & SONS, Crawley, Sussex, showed a number of flower-spikes of their rose-coloured Lupin named *Lupinus polyphyllus roseus* and a white pompon-Cactus *Dahlia* labelled The Bride.

Messrs. WM. CUTBUSH & SON, Highgate Nurseries, London, N., displayed a prettily-arranged exhibit of *Chrysanthemum maximum* "The Speaker," a large-flowered variety, with pure white florets.

Messrs. KENWARD & SON, Lewes, showed a number of floral devices.

Mr. A. WRIGHT, 43, Tharp Road, Wellington, Surrey, showed flowers of *Petunia*, each under a name.

Miss DODGE, Loseley Park, Guildford (gr. Mr. R. Staward), exhibited vases of double-flowered Stocks.

LEOPOLD DE ROTHSCHILD, Esq., Gunnerbury House, Acton, W. (gr. Mr. James Hudson), showed a batch of plants of a small-flowered, scented-leaved *Pelargonium* named Countess of Devon, and excellent specimens of *Cyrtanthus hybridus*, to which a First-Class Certificate was awarded in 1885. A Cultural Commendation was awarded for these latter plants.

AWARDS.

AWARD OF MERIT.

Streptocarpus, Burdell's strain.—Several plants of greenhouse *Streptocarpus*, bearing flowers that measured 3 inches across their widest part, were shown by Mr. F. BURDELL, Sunningdale, Berks. The plants were extremely floriferous: as many as 20 expanded inflorescences and more than this number of cut flower-stalks were seen on some of the plants. The colour was a deep shade of lavender-blue, with crimson blotches near the mouth. The Award was granted to the strain.

BOTANICAL CERTIFICATE.

Rubus bamburarianus. This is a newly-introduced species from China. It has a trailing, drooping habit, with long, bramble-like shoots, bearing handsome triparted leaves of a deep, glossy green above, and with a white tomentum beneath. Each leaf-segment is about 5 inches in length, and linear-lanceolate in shape. The fruits are not unlike those of our native Bramble. Shown by Messrs. JAMES VEITCH & SONS, LTD.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair); and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, W. Boxall, G. F. Moore, W. Thompson, J. Wilson Potter, H. T. Pitt, A. A. McBean, T. W. Bond, A. Dye, W. P. Bound, W. H. Young, J. Charlesworth, H. G. Alexander, W. H. White, F. J. Thorne, H. A. Tracy, W. Cobb, and W. Bolton.

Major G. L. HOLFORD, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. H. G. Alexander), was awarded a Silver-Gilt Lindley Medal for an immense plant of *Lælio-Cattleya elegans* with 30 flower-spikes, bearing together 230 flowers, the largest spike having 13 blooms. The specimen, which was one of the finest Orchids ever staged at an exhibition, was an example of high culture, the flowers being perfect in development and of fine, rich, purple colour.

Major HOLFORD also received a Silver Banksian Medal for a selection of six new hybrid Orchids, viz., *Brasso-Cattleya Madame Jules Hye*, with pretty, bluish-white flowers, having sulphur-coloured discs to the lips; *Cattleya Pittiana superba*; *C. fulvescens magnifica*, with flowers of a pale buff tint, having handsome rose-veined lips; *Lælio-Cattleya Ophir* "Variety delicata," white, with yellow throat, and rose front to the lip; *Cattleya Euphrasia* "Westonbirt variety," a fine form of the plant recorded at a recent meeting as *L.-C. Macanensis*; and *Lælio-Cattleya Arethusa* (*C. Harrisoniana* × *L.-C. Exoniensis*). Sir TREVOR LAWRENCE, Bart., Burford (gr.

Mr. W. H. White), was awarded a Silver Banksian Medal for a pleasing group of the rare, light-scarlet-coloured terrestrial Orchid *Habenaria rhodocheila*, which is of similar habit to *H. militaris*. The group contained about two dozen very healthy and well-flowered plants. Sir TREVOR LAWRENCE also displayed a plant of *Polystachya odorata*, with a 10-branched inflorescence of white flowers, and a grand specimen of *Bulbophyllum longisepalum*. (See Awards.)

Messrs. CHARLESWORTH & CO., Heaton, Bradford, secured a Silver Flora Medal for a fine group, containing some good examples of their fine strain of *Odontoglossum Rolfeæ* and a hybrid between this and *O. Pescatorei*. The hybrid resembled a very large-flowered *O. Pescatorei*, with violet-purple blotches on the sepals. The group also contained other showy hybrids, including one raised from *Lælia purpurata* × *L. grandiflora* (*majalis*). The seedling showed a great improvement on the latter parent, and was a most attractive flower. Among the species were two plants of *Cycnches Egertonianum*, the one representing the numerous-flowered racemose male form, and the other the female, bearing a short twin-flowered spike of large, wax-like blooms. In the centre of the group was a specimen of the rare *Bulbophyllum viscescens* with an umbel of 10 flowers; other species noted were *Zygopetalum Burkei*, *Z. crinitum cœruleum*, *Brassia guttata*, *Angræcum Scottianum*; the very singular fringed-lipped *Chondrorhyncha Chestertonii* and *Scuticaria Steelii*, with long terete leaves and showy flowers at the base. (See Awards.)

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Flora Medal for a meritorious group, the back plants of which were fine selections of *Lælio-Cattleya Blechleyensis*, *L.-C. callistoglossa*, *Cattleya Lord Rothschild*, *Odontoglossum Rolfeæ*, and a very effective arrangement of the scarlet *Disa grandiflora*. Among the newer hybrids, *Cattleya Davisii* (*velutina* × *Hardyana*) was pretty, and showed great variation. *Cypripedium Watsonianum*, *C. Mary Beatrice*, and *C. Niobe magnifica* were other good flowers. Of the species noted were *Stanhopea oculata*, *Catasetum macrocarpum*, *Miltonia Roezlii alba*, *Promenaea xanthina*, *Miltonia Regnellii citrina*, and *Galeandra lacustris*.

Messrs. ARMSTRONG & BROWN, Tunbridge Wells, Kent, staged an excellent group, for which a Silver Flora Medal was awarded. At the back were six plants of the new *Lælio-Cattleya* George Woodhams (*L. purpurata* × *C. Hardyana*), a fine companion to the handsome *L.-C. callistoglossa*, with large, purplish-rose-coloured flowers, having a finely-developed claret-purple lip; several of a fine type of *L.-C. Blechleyensis*, a large specimen of *Maxillaria tenuifolia*, a selection of *Dendrobium Phalaenopsis*, and several good white *Odontoglossum crispums*. With these were several *Cypripediums*, including the new *C. Braceyana* (*superbiens* × *Lord Derby*), which had flowers of the Lord Derby type, but with much broader petals, and a white ground; *C. Maudiae*, *C. Bella*, *C. Dayanum*, *C. Harrisianum albens*, and several hybrids of *C. Charlesworthii*. The group contained also three plants of *Bulbophyllum Dearei*, a good example of the rose-coloured *Eulophia guineensis*, *Masdevallia Davisii*, &c.

Mrs. TEMPLE, Leyswood, Groombridge (gr. Mr. Bristow), was awarded a Silver Flora Medal for a group of well-grown *Disa grandiflora*, the plants bearing together over 100 very fine scarlet blooms. With them was a very handsome specimen of *Epidendrum Brassavola* with nine flower-spikes.

Baron Sir H. SCHRODER, The Dell, Egham (gr. Mr. Ballantine), showed *Cypripedium Del-lense* (*Mastersianum* × *Rothschildianum*), an effective hybrid with the habit of *C. Rothschildianum*. The upper sepal is greenish-white, with purple lines; the petals are greenish, tinged with rose and spotted with chocolate; the lip is long, compressed, and of a pale reddish-brown colour. We also noticed a good form of *Cattleya A. de Laresse*.

Messrs. JAS. VEITCH & SONS, Chelsea, sent *Cypripediums* Jas. H. Veitch (*Curtisii* × *Stonei platytanum*) and C. W. R. Lee.

Messrs. HUGH LOW & CO., Bush Hill Park, Enfield, staged a small group, which contained *Cattleya bicolor Grossii*, *C. granulosa*, *C. Dowiana*, *C. Gaskelliana alba*, several *Lælio-Cattleya Ingramii*, *Odontoglossum Pescatorei*,

O. Wallisii purum, O. Schlieperianum, and various Cypripediums.

JEREMIAH COLMAN, Esq., Gatton Park, Reigate (gr. Mr. W. P. Bound), sent Cattleya Adula var. Colmaniae bicolor × Hardyana Mrs. Jeremiah Colman), a pretty rose-purple flower with intense ruby-purple lip.

Messrs. J. & A. A. McBEAN, Cooksbridge, showed Oncidium macranthum nanum, with a short spike bearing 12 clear-yellow flowers shaded a slight olive green on the sepals; and Odontoglossum Harryanum grande, a large, finely-formed, and very darkly-coloured flower.

AWARDS.

BOTANICAL CERTIFICATES.

Polycynis Charlesworthii, from Messrs. CHARLESWORTH & Co.—A very remarkable species, with the habit and form of inflorescence seen in *Gongora*, and probably nearest to *P. barbata*. The long, arching inflorescence bore about 50 flowers, each of which measured an inch across. The rather broad sepals, of which the upper one is abruptly turned back, are yellowish and closely mottled with pale red-brown. The singular linear petals are long and curiously twisted, in colour yellow, with some slight, reddish spots at the base; lip long and narrow, brownish, studded with whitish hairs.

Bulbophyllum longisepalum, from Sir TREVOR LAWRENCE, Bart., Burford (gr. Mr. W. H. White).—A very remarkable species, originally figured in *Lindenia III.* as *B. grandiflorum*. The long sepals are projected forward, and form a long, beaked-like flower, which is whitish, closely netted with reddish-claret colour. The species is a native of New Guinea.

AWARD OF MERIT.

Miltonia Schroderiana "Heaton variety," from Messrs. CHARLESWORTH & Co.—A splendid form of this attractive species from Central America, and the largest and best in colour yet shown. The yellowish-white sepals and petals were heavily marked with chocolate-purple; the showy lip is of a dark magenta-rose colour at the base, the apical half being pure white.

CULTURAL COMMENDATION.

To Mr. W. H. White, Orchid grower to Sir TREVOR LAWRENCE, Bart., for a very fine specimen of *Bulbophyllum longisepalum* with 14 flowers.

Fruit and Vegetable Committee.

Present: George Bunyard, Esq. (in the chair); and Messrs. A. H. Pearson, Jos. Cheal, Chas. Walker, Alex. Dean, Wm. Pope, Horace J. Wright, George Relf, Owen Thomas, J. Jaques, J. Willard, W. Poupart, W. Wilks, J. Davis, H. Parr, and W. Bates.

Twenty-one varieties of Melons from the trial of these fruits at Wisley Gardens (see p. 136 in the last issue) formed an interesting exhibit. Two of the varieties were granted Awards of Merit. Several seedling Melons from other sources were presented for Awards, but none was considered worthy of this distinction.

Miss DODGE, Loseley Park, Guildford (gr. Mr. R. Staward), in addition to staging several seedling Melons, showed eight varieties of culinary Peas, six of which were selected for trial at Wisley.

Messrs. W. PAUL & SON, Waltham Cross, Herts., exhibited a meritorious group of pot-trees of Peaches, Nectarines, Plums, and Figs. Of Peaches, there were Amstden June, Goshawk, and Noblesse; Nectarines, Pineapple and Rivers' Orange; Plums, Sultan, Grand Duke, Goliath, Autumn Compôte, White Magnum Bonum, and Pond's Seedling. The Fig trees were used as an edging to the group. (Silver-Gilt Hogg Medal.)

Messrs. T. RIVERS & SONS, Sawbridgeworth, Herts., showed a collection of Apricots as pot plants. The trees were finely fruited, and embraced the varieties Large Early, Montgamet, Peach, Hemskerk, Royal, Precoce d'Oullins, and Moor Park. The trees were not more than three years' grafted. (Silver-Gilt Hogg Medal.)

Messrs. S. SPOONER & SONS, Hounslow, showed 29 varieties of Apples, a few dishes of Plums, and fruits of a hybrid Strawberry × Raspberry. The varieties of Apples included Worcester Pearmain, Stirling Castle, Lord Grosvenor, Red Astrachan, Mr. Gladstone, Early Red Margaret, Cardinal (syn. Peter the

Great), Worcester Pearmain, Early Victoria, and Red Quarrenden. (Silver Knightian Medal.)

AWARDS OF MERIT.

Melon Perfection.—A variety of handsome appearance, for which the Award was mainly granted. The exterior is dark green with white netting. From Messrs. SUTTON & SONS, Reading.

Melon Duchess of York.—This was the best-flavoured fruit of the 21 varieties staged on this occasion. It is of medium size; the flesh is white and the exterior yellow, with reticulations. From Messrs. HURST & SON, Houndsditch.

Potato Favourite.—One of the best-cropping varieties under trial at Wisley this season. The Award was bestowed after a test of its edible qualities. From Messrs. DOBBIE & Co., Rothesay.

A variety of Melon being already in commerce under the name Advance, the Melon granted an Award of Merit under that name by the sub-committee at Wisley (see p. 136) is to be known as Charles Ross, and the award will be recorded under this name.

THE LECTURE.

At the afternoon meeting a lecture on "Terrace-garden Plants" was delivered by Mr. James Hudson, V.M.H. The lecturer contrasted terrace-gardening of the present day with that of some 25 to 50 years ago. He regretted the absence of many of the nobler plants which were formerly used for the adorning of terraces. Large, well-grown specimens of plants in distinct species and kinds at once attract attention and afford a distinctive feature to their surroundings. Mr. Hudson referred to the common demand for what are termed "decorative" plants, many of which are of a fugitive nature.

Details of the culture of the various plants for this phase of gardening were given, and especially the requirements of large specimen plants. Allusion was made to the plants that are grown at Gunnersbury House gardens for the furnishing and adornment of terraces. The list included Myrtles, the specimens of which are very large, Aloysia Lippia citriodora, shrubby Veronicas, immense plants of scented-leaved Pelargoniums, Pomegranates in variety, and Agapanthus umbellatus. These and many other plants, including Palms, Bamboos, Phormiums, &c., are all suitable for this purpose of garden-decoration. Tubs were recommended for such species, in preference to pots.

NATIONAL SWEET PEA.

PROCEEDINGS OF THE FLORAL COMMITTEE, 1907.

The Floral Committee members who attended were:—Mr. Walter P. Wright (chairman), Mr. J. M. Bridgford (Watkins & Simpson), Mr. S. B. Dicks (Cooper, Taber & Co.), Mr. G. Herbert (C. W. Breadmore), Mr. A. Ireland (Dobbie & Co.), Mr. J. Jones (H. Eckford), Mr. Thos. Jones (Ruabon), Mr. A. Malcolm (Duns, Berwick), Mr. Thos. Stevenson (Addlestone), and Mr. T. A. Weston (Lyminge, Kent).

CHAS. H. CURTIS,

Hon. Sec. National Sweet Pea Society.

CERTIFICATES AND AWARDS.

At the Royal Horticultural Hall, July 16:—

AWARD OF MERIT.—To Elsie Herbert (C. W. BREADMORE), Evelyn Hemus (MISS HEMUS), Nancy Perkin (H. A. PERKIN), Rosie Adams (T. STEVENSON), Saint George (HURST & SON), Silas Cole (S. COLE), and The Marquis (DOBBIE & Co.).

At the Reading trials, July 18:—

SILVER MEDAL.—To Saint George (HURST & SON), as the best novelty of the year.

FIRST-CLASS CERTIFICATE.—To Saint George (HURST & SON), and Helen Pierce (H. ECKFORD).

AWARD OF MERIT.—To Princess Victoria (DOBBIE & Co.), Nora Unwin (WATKINS & SIMPSON), Lord Nelson (I. HOUSE & SON), and Prince Olaf (DOBBIE & Co.).

TOO-MUCH-ALIKE VARIETIES.

The following varieties have been bracketed as too much alike. "Not more than one of the

bracketed varieties shall be shown on the same stand at any exhibition of the National Sweet Pea Society." Priority is given the first name:—

{ Etta Dyke	{ John Ingman
{ White Spencer	{ George Herbert
{ Queen Alexandra	{ E. J. Castle
{ Scarlet Gem	{ Rosy Morn
{ Her Majesty	{ Rosie Sydenham
{ Splendour	{ Mrs. W. King
{ Lord Rosebery	{ Phyllis Unwin
{ Cyril Breadmore	{ Flora Norton
{ Mrs. Collier	{ Miss Philbrick
{ Mrs. Felton	{ Modesty
{ Dora Cowper	{ Duchess of Sutherland
{ Ceres	{ Sensation
{ Yellow Dorothy Eckford	{ Countess of Aberdeen
{ Captain of the Blues	{ Princess Victoria
{ Bolton's Blue	{ Pink Gem
{ Lady Grisel Hamilton	{ Countess of Spencer
{ Countess of Radnor	{ Paradise
{ New Countess	{ Enchantress
{ Princess May	{ Olive Bolton
{ Duke of Sutherland	{ Codsall Rose
{ Monarch	{ Gorgeous
{ Lottie Eckford	{ Miss B. Whiteley
{ Maid of Honour	{ Mildred Ward
{ Ivy Miller	{ Countess of Lathom
{ Black Knight	{ Coral Gem
{ Stanley	
{ Boreatton	

* Dobbie's Princess Victoria is meant, not the old variety of this name, which is cerise with carmine standards.

CLASSIFICATION.

The committee recommends the following as the best in their colours:—

White	Dorothy Eckford and Nora Unwin.
Crimson and Scarlet	King Edward and Queen Alexandra.
Rose and Carmine	John Ingman.
Yellow and Buff	Mrs. Collier.
Blue	Lord Nelson and Romolo Piazani.
Blush	Mrs. Hardcastle Sykes
Cerise	Coccinea.
Pink	Countess Spencer.
Orange Shades	Helen Lewis & Henry Eckford.
Lavender	Lady Grisel Hamilton and Frank Dolby.
Violet and Purple	Duke of Westminster.
Magenta	George Gordon and Captivation.
Picotee Edged	Dainty.
Fancy	Sybil Eckford.
Mauve	Mrs. Walter Wright.
Maroon and Bronze	Black Knight.
Striped and Flaked (red and rose)	Jessie Cuthbertson.
Striped and Flaked (purple and blue)	Sutton's Marbled Blue
Bicolor	Jeannie Gordon.
Marbled	Helen Pierce.

EXCLUDED VARIETIES.

With a view to establishing a basis for the elimination of old and inferior varieties, the general committee has, on the recommendation of the Floral Committee, decided to exclude the following varieties from the society's trials in future:—

Sensation	Lady Mary Currie
Duchess of Sutherland	Lottie Hutchins
Katherine Tracey	Venus
Lord Kenyon	Mrs. H. K. Barnes
Colonist	Blanche Ferry
Lady Skelmersdale	Grey Friar
Lovely	Princess of Wales
Mrs. Knights Smith	Sadie Burpee
Queen Victoria	Mrs. Sankey
Salopian	Primrose
Mars	Countess of Radnor
Lady Penzance	Duchess of York
Countess of Aberdeen	Emily Eckford
Her Majesty	Waverley
Mrs. Dugdale	Boreatton
Cyril Breadmore	Fashion
Prima Donna	Countess of Powis
Mrs. Gladstone	Oriental
Mrs. Eckford	Gorgeous
Lady M. Ormesby Gore	Gracie Greenwood
Firefly	Marchioness of Cholmondeley
Dorothy Tennant	Stella Morse
Lady Nina Balfour	Mrs. Joseph Chamberlain
Golden Gate	Pink Friar
Admiration	Blanche Burpee
Countess Cadogan	Emily Henderson
Shahzada	Queen of England
Monarch	The Invincible Varieties
Calypso	
Chancellor	

BRITISH GARDENERS' ASSOCIATION.

The Council of the Royal Botanic Society, Regent's Park, have placed their museum at the disposal of the Executive Council on the occasion of the London Dahlia Society's exhibition on September 12. A conference on "Examinations for Gardeners" will take place at 6 p.m. Members of the association will be admitted to the gardens on presentation of their tickets.

SHROPSHIRE HORTICULTURAL.

Exhibition at Shrewsbury, August 21 & 22.

THE thirty-third annual exhibition was held in the Quarry Grounds, Shrewsbury, on Wednesday and Thursday last, and the event was attended with even greater success than ever. The exhibits were more numerous, and there were two more tents for their accommodation than have been provided on previous occasions. The actual area covered by the tents was 61,140 square feet, being 3,000 square feet more than last year.

The greatest interest still appears to be centred in the competitive exhibits of fruit, and it having been anticipated that Lord Hastings and his gardener, Mr. Shingler, would win the fifty-guinea challenge cup for Grapes for the third and last time, the circumstance added to the interest that has always been evinced in the competitions for that prize. There were 11 entries this year in that particular class, and the task of judging so many important exhibits detained the judges much longer than is usual, inasmuch that the work was incomplete at a later hour than we remember at the Shropshire shows. When at length the 1st prize ticket was placed on Lord Hastings' collection there was a general cheer from the people present in the marquee at the time. It was a popular win. Now that the cup has ceased to be the property of the Shropshire Society, the committee will have to revise the schedule in some degree, and it will be interesting to see if some new feature can be added to the displays of this most remarkable provincial society. Its success in the past has been unequalled by similar exhibitions, as the details we have published from time to time regarding the immense crowds that visit Shrewsbury during the fête, and the large sums of money raised each year, have proved over and over again. It is satisfactory to know that the money has been put to laudable purposes, such as the erection of a suitable statue to Charles Darwin in his native town, the improvement and development of the parks in the town, and the assistance of charities.

Reverting to the show, which is still open as we go to press, it may be remarked that the groups of miscellaneous plants were as delightful as ever. Messrs. J. CYPHER & SONS excelled previous efforts and won the 1st prize in each of the two open classes. It was stated that this firm won prizes amounting to £106!

Tuberous-rooted Begonias were conspicuous amongst the flowering plants.

Additional interest attached to the exhibition of vegetables this year on account of the champion prize offered by the society for the best collection of nine dishes of vegetables in the show. The Duke of PORTLAND and his gardener, Mr. James Gibson, won that prize, and also the 1st prize of £10 in the society's new class, also for nine dishes. The one exhibit gained both prizes. The quality of the vegetables from the experienced growers was of the highest, and it was also satisfactory to see that many new exhibitors of vegetables came forward on this occasion.

The president for the year is Colonel H. J. Hope Edwardes, Netley Hall, Shropshire, and the honorary secretaries are Messrs. H. W. Adnitt and W. W. Naunton, who all these years have done so much to bring about the prosperity the society now enjoys.

CHAMPION GRAPE CLASS.

THE FIFTY-GUINEA CUP WON OUTRIGHT.

The champion Grape class at Shrewsbury was established in 1902. It was arranged for 12 bunches of Grapes in four or more distinct varieties, but not more than four bunches of any one variety could be shown by the same exhibitor. The prizes offered were as follow:—1st, a champion silver cup valued at 50 guineas, and a sum of £20; 2nd prize, £16; 3rd prize, £12; 4th prize, £7 10s.; 5th prize, £5; and 6th prize, £4. At the commencement of the competitions there were no definite points fixed for the different varieties, and some of those which are the more easily grown were shown in first-class condition and won prizes as against Muscat varieties presented in slightly inferior condition. This was altered after the first year

or two, and definite maximum points stated for the Muscat varieties, which were as follow:—Muscat of Alexandria, 11 points; all other Muscat varieties (black or white), 10 points; any other variety of Grape, 9 points. Superior cultivation and finish were recommended to the judges as points of the highest importance. Each bunch is judged on its individual merits and points are awarded separately. The collections may be decorated with flowers and foliage plants at the discretion of the exhibitor, but these decorations form the subject of a separate competition, for which prizes are awarded; they are not considered in judging the Grapes. The Champion Cup was to become the absolute property of the exhibitor who should win it three times. The late Lord Hastings won it in 1902 and 1904. His late lordship's gardener won it also in 1905, but in the meantime a new proprietor having succeeded to Melton Constable, this win, instead of becoming the final for the cup, was regarded as the first in a new competition. The present Marquis has not suffered defeat in a subsequent competition, therefore the cup has now become his property. It is the fifth time the 1st prize has been won in this class by Grapes cultivated by Mr. Shingler. Lord Hastings' exhibit was as follows, and the number of points gained by each dish is indicated:—

	Maximum No. of points.	Points awarded.
Alnwick Seedling (1) ...	9	9
Muscat of Alexandria (2) ...	11	10
Madresfield Court (3) ...	10	9½
Madresfield Court (4) ...	10	9
Muscat of Alexandria (5) ...	11	10½
Gros Maroc (6) ...	9	8½
Madresfield Court (7) ...	10	8½
Gros Maroc (8) ...	9	9
Muscat of Alexandria (9) ...	11	10
Muscat of Alexandria (10) ...	11	10½
Muscat of Alexandria (11) ...	10	10
Black Hamburgh (12) ...	10	9
Totals ...	121	113½

It will be seen that in three cases the maximum number of points was awarded the bunch. In all these cases the quality was very high, but the weight not more than medium. Muscats only failed from receiving the maximum by one point in two cases, and half a point in the two other instances, but it may be pointed out that two of the bunches shown were very deficient in colour. Under the circumstances, therefore, the pointing may be considered very high, and in a better Grape season the standard would have to be raised, as there would be better bunches than those now under notice. But they were the best in the show, and constituted a collection of which any gardener might justly be proud. The 2nd prize was won by J. W. FLEMING, Esq., Romsey, Hants (gr. Mr. W. Mitchell), who was awarded 106½ points, as will be seen from the following table:—

	Maximum No. of points.	Points awarded.
Black Hamburgh (1) ...	10	9
Madresfield Court (2) ...	10	8
Muscat of Alexandria (3) ...	11	10
Madresfield Court (4) ...	10	9
Muscat of Alexandria (5) ...	11	9½
Gros Maroc (6) ...	9	9
Gros Maroc (7) ...	9	8
Madresfield Court (8) ...	10	8
Gros Maroc (9) ...	11	8½
Muscat of Alexandria (10) ...	11	10
Madresfield Court (11) ...	10	8
Muscat of Alexandria (12) ...	11	9½
Totals ...	123	106½

The 3rd prize was won by the Earl of HARRINGTON, Elvaston Castle (gr. Mr. J. H. Goodacre), who was awarded 106 points. 4th, G. A. GIBBS, Esq., Tyntesfield, Bristol (gr. Mr. T. Wilkinson), with 102½ points. 5th, the Marquis of DOWNSHIRE, Hillsborough Castle (gr. Mr. T. Bradshaw), with 101 points; and 6th, G. FARQUHAR, Esq., Eastnor Castle (gr. Mr. Mullins), with 99½ points.

OTHER GRAPE CLASSES.

Four bunches of black and white varieties.—In this class, arranged for two bunches of a black and two bunches of a white variety, there were six exhibits. The best were shown by Lord HARLECH, Brogyntyn (gr. Mr. T. Lambert). He had large, well-coloured bunches of Madresfield Court, and heavy bunches of Muscat of Alexandria, the outer berries of which had good colour, but the inner ones requiring a little longer period to perfectly mature. 2nd, Lord SAVILLE, Trafford Abbey, Notts. (gr. Mr. J. Doe), who showed the same varieties, but his berries of Madresfield Court were smaller, and the large bunches of Muscat of Alexandria had berries of irregular size. 3rd, the Marquis of NORMANBY, Mulgrave Castle, Whitby (gr. Mr. J. Corbett), with the varieties Muscat Hamburgh and Muscat of Alexandria.

Black Hamburgh.—Eleven competitors showed in this class, and the winner of the 1st prize was J. BRINTON, Esq., Stourport (gr. Mr. W. H. Wilson), who had well-shouldered bunches of satisfactory size, and highly coloured berries. C. F. BOSTON, Esq., Huyton, Liverpool (gr. Mr. T. Bagnall) won the 2nd prize; and the Earl of LONSDALE, Market Weighton (gr. Mr. C. McPherson), the 3rd prize. The best single bunch of the same variety was of moderate size, but most regular in size and colour-development of the berries. It was shown by Lord HASTINGS. There were 16 exhibits in this class.

Black Muscats. In a class for the best two bunches of a variety of Black Muscat, the 1st prize was awarded to two bunches of the variety Madresfield Court, shown by J. W. FLEMING, Esq., Romsey, Hants (gr. Mr. W. Mitchell). These were long, somewhat attenuated bunches of large, well-coloured berries. The same variety from JOHN BRINTON, Esq., was awarded the 2nd prize; and "Lady Hastings," a sport from Muscat Hamburgh, and exhibited by Lord HASTINGS, gained the 3rd prize. There were nine exhibits.

Madresfield Court. Out of nine exhibits in this class, the best was shown by Lord HASTINGS, and it consisted of two bunches remarkable for the finely developed berries. 2nd, Lord SAVILLE; and 3rd, JOHN BRINTON, Esq.

Black Alicante.—The best two bunches of this variety were shown by G. FARQUHAR, Esq., being of considerable weight and excellent colour. 2nd, the Earl of LONDESBOURGH; and 3rd, C. F. BOSTON, Esq.

Any other black Grape.—The best variety in the "any other black" class was adjudged to be Gros Maroc, as shown by Mr. W. E. HYDE, Ledbury. This was a very good exhibit. The variety gaining the 2nd prize was Alnwick Seedling, shown by Lord HARLECH. These were very large bunches, and the berries were coloured to the last degree possible. 3rd, Gros Maroc, shown by G. FARQUHAR, Esq.

White Muscats.—There were 10 pairs in this class, and the variety Muscat of Alexandria very naturally gained the 1st prize. The bunches shown by the Earl of DERBY, Knowsley, Prescott (gr. Mr. E. F. Hazelton), were of only medium weight, but the berries were well developed, and they had extremely clear and perfect skins, the finish being admirable. These were awarded the 1st prize. The same variety shown in the form of much larger bunches, with berries perfectly ripe, but with disfigured skins, from W. MARSH, Esq., Henrietta Park, Bath (gr. Mr. Taylor) obtained the 2nd prize; and the Marquis of NORMANBY, Mulgrave Castle (gr. Mr. J. Corbett), had the 3rd prize. The most successful exhibit in the class for a single bunch of the same variety was shown by Lord HASTINGS, the berries in this case being very good and the bunch of about average exhibition weight. 2nd, J. W. FLEMING, Esq.

Any other white Grape.—The variety Buckland Sweetwater, shown by H. A. ATTENBOROUGH, Esq., Daventry (gr. Mr. A. Child), obtained the 1st prize in the class for any other variety of white Grape. The same variety shown by

Alderman H. DAVIS, Stoke Bishop (gr. Mr. Curtis), and E. P. THOMPSON, Esq., Whitchurch (gr. Mr. W. A. Webster), won the 2nd and 3rd prizes respectively, but those which gained the 1st prize were very superior in the size of the berries.

LOCAL CLASSES.

There were several classes for Grapes in which only those cultivators residing in the county of Salop were permitted to exhibit. In that for the variety Black Hamburgh, the 1st prize was won by the Rev. T. M. BULKELEY-OWEN, West Felton (gr. Mr. Langley), and the 2nd prize by Capt. HEYWOOD LONSDALE, Shavington Hall (gr. Mr. J. Mills). For Madresfield Court, Lord HARLECH won the 1st prize, and Capt. HEYWOOD LONSDALE the 2nd prize. The winner of the 1st prize in the class for any other black Grape was the Rev. T. M. BULKELEY-OWEN, and W. L. LEVETT won the 2nd prize. The best fruit of Muscat of Alexandria was shown by Lord HARLECH, and the 2nd prize was awarded to Lord TREVOR, Brynkinalt, Chirk (gr. Mr. Dawes). In the class for any other variety of white Grape than those mentioned, the 1st prize was awarded to Muscat of Alexandria, from E. P. THOMPSON, Esq., Whitchurch (gr. Mr. W. A. Webster).

Six dishes of hardy fruits.—The 1st prize was won by Capt. HEYWOOD LONSDALE, who included in his exhibit dishes of Apples, Red Currants, White Currants, Raspberries, Cherries, and Gooseberries. 2nd, N. ROBINSON, Esq., Ellesmere (gr. Mr. W. Roberts).

TABLES OF FRUIT DECORATED AS FOR DESSERT.

Each table measured 10 feet by 4 feet 6 inches. The tables were covered with white cloths, and might be decorated with plants in pots, cut flowers (Orchids excluded), and ornamental foliage. No exhibitor might show more than 15 dishes of fruit, and the kinds must be selected from a list published in the schedule. The 1st prize on this occasion was awarded to the Duke of WESTMINSTER, Eaton Hall, Chester (gr. Mr. N. F. Barnes), who may be congratulated on a well-arranged table of very choice fruits. He won 115½ points, which were awarded in the manner shown in the following table:—

	Points awarded.
Apple The Houblon	6
Apple Cox's Orange Pippin	6½
Grape Appley Towers	6½
Grape Madresfield Court	7
Grape Muscat of Alexandria	7½
Grape Canon Hall Muscat	8
Melon Eaton Seedling	7
Melon Hero of Lockinge	7
Nectarine Spencer... ..	6
Nectarine Elruge	4½
Plum Golden Drop	5
Peach Violette Hative	4½
Peach Princess of Wales	7½
Pear Doyenné du Comice	6
Pear Triomphe de Vienne	5½
Beauty of flower and foliage	7
Blending of colour	7
General arrangement for effect... ..	7

115½

G. FARQUHAR, Esq., Ledbury (gr. Mr. G. Mullins), won the 2nd prize, and obtained 107½ points, showing a very commendable collection. 3rd, the Earl of HARRINGTON, Elvaston (gr. Mr. J. H. Goodacre), with 106½ points. The 4th prize fell to J. DRAKES, Esq., Market Rasen (gr. Mr. T. Cooke), who had 95 points, being only one point more than those obtained by the Hon. E. F. WOOD, Temple Newsam (gr. Mr. R. Dawes). Being arranged in a conspicuous position in the marquee, these decorated tables again excited much admiration; but in the interests of the show the committee would do well to consider the possibility of imparting something of novelty even to this class, as the exhibits each season do not offer sufficient variation. It is particularly unfortunate that on this occasion the floral decorations in the various exhibits were so similar. In five of the six cases *Francoa ramosa* was employed, and generally they were associated with *Montbretias*. These flowers are certainly of a suitable character for such a purpose, but there are many pretty and graceful species that are equally adaptable, and it is a pity that exhibitors have so pronounced a tendency to copy each other's methods in detail.

COLLECTIONS OF FRUITS.

Collection of Sixteen Dishes of Fruit in Sixteen varieties, and not fewer than Twelve kinds.—This is the largest class in those for collections of fruit, and on this occasion there were four exhibits. The 1st prize was won by G. FARQUHAR, Esq., Eastnor Castle, Ledbury (gr. Mr. G. Mullins). He had very large bunches of Black Alicante Grapes, good in size and colour of berries; also good Black Hamburgh Grapes and moderate Muscat of Alexandria. Among stone fruits were Peaches Devonian and Bellegarde, Nectarine Spencer, Plum Transparent Gage, Apricot Large Early, and Cherries Bigarreau Napoleon. He had excellent fruits of Gascoyne's Scarlet Seedling Apple; also Peasgood's Nonsuch Apples, Gunton Hero and a seedling Melon, Marguerite Marrilat Pear, Brown Turkey Figs, and Oxonian Strawberries. This exhibit was awarded the 1st prize for its decorations. 2nd, the Earl of HARRINGTON, whose Grapes consisted of Duke of Buccleuch, Muscat of Alexandria (insufficiently well coloured), Muscat Hamburgh, and Black Hamburgh. He had also good Peaches, Nectarines, Apricots, Plums, Pears, Apples, Figs, Strawberries, and Cherries. 3rd, Mr. W. E. HYDE, Ledbury, who also obtained the 3rd prize for the decorations employed. The Hon. E. F. L. WOOD, Temple Newsam (gr. Mr. R. Dawes), who obtained the 4th prize for fruit, was awarded the 2nd prize for decorations.

Collection of Twelve Dishes.—There were, as usual, more exhibits in this class than the preceding one, and the exhibit which won the 1st prize for the Earl of LONDESBOURGH, Market Weighton, Yorks. (gr. Mr. J. McPherson), was composed of very fine fruits. His Black Alicante Grapes were of a first-rate character, being of satisfactory weight, excellent colour, and having the characteristic shoulders of this variety. Gros Guillaume and Muscat of Alexandria were the other varieties of Grape exhibited, and of these Gros Guillaume was shown in the best condition. The other fruits included two Melons, also Souvenir du Congrès Pear, Ribston Pippin Apple, Pineapple and Lord Napier Nectarines, Royal George Peaches, Transparent Gage Plums, and Brown Turkey Figs. This exhibit also obtained the 1st prize offered for decorations employed in this class, and they consisted in this case of *Montbretias* and *Francoa ramosa*. The 2nd prize was won by Lord BIDDULPH, Ledbury (gr. Mr. H. Cotton). He had of Grapes, Black Alicante, Duke of Buccleuch, Gros Maroc, and Muscat of Alexandria; also Nectarine Lord Napier, Peach Bellegarde, Fig Brown Turkey, Plum Transparent Gage, Pear Souvenir du Congrès, Apple Washington, and two Melon fruits. 3rd, the Earl of SANDWICH, Huntingdon (gr. Mr. J. Barson).

The 2nd and 3rd prizes for the decorations employed in this class were awarded to Mrs. F. NEED, Great Malvern (gr. Mr. J. Jones), and J. DRAKES, Esq., Market Rasen (gr. Mr. T. Cooke).

Eight Dishes.—There were four exhibits in this class, and the 1st prize was won by Capt. HEYWOOD LONSDALE, Shavington Hall (gr. Mr. J. Mills). He had Muscat of Alexandria and Madresfield Court Grapes, Bellegarde Peaches, Elruge and Pitmaston Orange Nectarines, Astrachan Apples, Kirke's Plums, Hero of Lockinge and Baron Hamilton Melons. The 2nd prize was won by Mrs. SWANN, Halston Hall, Whittington (gr. Mr. C. Roberts); and the 3rd by the Rev. T. M. BULKELEY-OWEN, Tedsmore Hall (gr. Mr. J. Langley).

SEPARATE KINDS OF FRUITS.

Peaches.—In the class for six Peaches there were as many as 25 exhibits, and the most of these were of excellent quality, making a fine display of well-cultivated fruit. The 1st prize was gained by very large and well-coloured specimens of Royal George, contributed by Lord SAVILLE. The same variety in somewhat smaller fruits, with more densely coloured skins, from the Earl of LATHOM, was awarded the 2nd prize; and the 3rd prize went to Captain T. A. M. DIGKIN, Loppington House, Wem (gr. Mr. G. Gilbert).

Nectarines.—Though there were slightly fewer exhibits in this class, there were some highly developed specimens in the 17 "dishes" staged. The 1st prize was won by the Marquis of NORTHAMPTON, Castle Ashby (gr. Mr. A. R. Searle), for

unnamed fruits which appeared to be of the variety Spencer. 2nd, J. W. FLEMING, Esq., with highly coloured fruits of Dymond; and 3rd, A. J. THORNHILL, Esq., Diddington Hall, Huntingdon (gr. Mr. Lockie).

Apricots.—There were 13 "dishes" staged in the class for six fruits of any variety of Apricot. Most of the fruits shown were below the average in quality and size, that has ruled at the Salop show. The explanation appears to be that the season is an abundant one as regards the crops of this much-appreciated fruit, and growers neglected to get their neighbours to thin the fruits for them. Doing the work themselves, they have only adopted the most lenient measures, and consequently the fruits are of very small size. Many of the exhibitors will be likely to strive for larger fruits on another occasion. It is most desirable to have an appreciable size in all stone fruits, because in large fruits the proportion of "stone" to the flesh is less than in specimens that are less well developed. A good dish of fruits of "Early Red" was found for the 1st prize, being shown by G. T. BATES, Esq., Allensmore, Hereford (gr. Mr. R. Grindrod). The same variety from Lord BIDDULPH, Ledbury (gr. Mr. H. Cotton), obtained the 2nd prize.

Melons.—This fruit is always exhibited in large numbers at Shrewsbury, and this year they appeared even more plentiful than usual. The best green-fleshed variety was "Best of All," shown by C. F. BOSTON, Esq., Charlwood (gr. Mr. T. Bagnall). The variety Royal Jubilee, shown by Sir D. DUCKWORTH KING, Wearhouse, Exeter (gr. Mr. Barker), won the 2nd prize; and the same variety from G. A. GIBBS, Esq., Tynte's Field, Bristol (gr. Mr. Wilkinson), the 3rd prize. There were 19 exhibits. In the class for scarlet-fleshed varieties, there were 23 exhibits. Sir D. DUCKWORTH KING, Bart., won the 1st prize with an unnamed fruit. 2nd, Lord ALDENHAM, Elstree, Herts. (gr. Mr. E. Beckett), who showed the variety Superlative. 3rd, Mr. S. H. MATTHEWS, Meste Brace, with the variety Superlative. There were 17 exhibits in the class for white-fleshed varieties, and the 1st prize was won by E. A. YOUNG, Esq., Tan-y-Bryn, Bangor (gr. Mr. A. Ruddock). It should be added that the Melon fruits are all tasted by the judges, and the prizes are awarded for superior flavour.

Plums.—The best 12 fruits of a Gage Plum were shown by the Duke of WESTMINSTER, Eaton Hall, Chester (gr. Mr. N. F. Barnes), who had the variety Transparent Gage. The best collection of 12 fruits of a yellow Plum other than a "Gage" variety was from the Earl of LONDESBOURGH, and he had the variety Coe's Golden Drop. In the class for a variety of red or purple Plum, the 1st prize was awarded to the Duke of PORTLAND, Welbeck Abbey, Notts. (gr. Mr. J. Gibson), for fruits of Kirke's.

Cherries were exhibited in a class for single dishes, and the 1st prize was gained by the variety Bigarreau Napoleon, shown by G. T. BATES, Esq., Hereford (gr. Mr. R. Grindrod).

GROUPS OF MISCELLANEOUS PLANTS.

These classes are at Shrewsbury of the highest character, and the competition is invariably keen. Some of the best known experts in grouping enter the competitions. In the class for plants in and out of flower, to occupy a space not exceeding 300 square feet, £60 is offered in three prizes.

On this occasion the 1st prize was awarded to Messrs. JAMES CYPHER & SONS, Cheltenham, whose group was a most harmonious decoration throughout, the combination of colour being in exquisite taste and keeping. The background comprised an elegant specimen of *Kentia Belmoreana*, associated with brilliant trusses of *Ixora Fraseri* and *I. macrothyrsa*, well-developed single-stem specimens of *Crotons Andreanus*, *Evansianus*, and *Thompsoni*, pretty examples of *Humea elegans* and *Francoa ramosa* being arranged towards the centre, hence causing no obstruction. Along the front were such Orchids as *Oncidium varicosum* Rogersii, *O. obryzatum*, *Odontoglossum crispum*, *Cattleya crispum*, and several *Laelio-Cattleya* hybrids, also such fine things as *Dendrobium formosum giganteum* and *D. Phalaenopsis Schröderiana*. These exhibitors have rarely ever staged a finer group, even at such a show as Shrewsbury.

The 2nd prize was awarded to G. H. KENDRICK, Esq., Edgbaston, Birmingham (gr. Mr. J.

V. Macdonald). This group was particularly brilliant with highly-coloured Crotons, of which there were rather too many, but the arrangement was specially good, and reflected the highest credit upon the exhibitor. *Francoa ramosa* and *Fuchsia triphylla* at the back of the group were in good keeping with the Crotons. Towards the front were such Orchids as *Vanda cœrulea* (lovely in its effect), *Cattleya Harrisonii* and *Lælia elegans*, with dwarf examples of *Ixoras* and *Begonia Gloire de Lorraine*.

The third prize went to Mr. W. A. HOLMES, Chesterfield, who had a bright and tastefully-arranged group in excellent taste. Dorothy Perkins Rose here was used rather freely, with a few good Orchids towards the front, several fine examples of single-stem Crotons, such as *C. Reidii* and *C. Warrenii*. This group, though very effective, was slightly overdone with these single-stem plants. Two other excellent exhibits were by Mr. FINCH, of Coventry (who had central arrangement, in itself effective, but rather too massive), and by Mr. VAUSE, of Leamington, which was a group of considerable merit. *Cattleya Harrisonii* was used here very effectively, also *Clerodendron fallax*. The competition in this class was probably never more keen than on this occasion. It afforded an exhibition in itself, and was one of the best possible object-lessons in grouping.

The same amount of money was offered in the class for foliage plants, with the same limit as to space. This class is always a feature at this exhibition, and after some years of experience the exhibitors have arrived at a high class of perfection in their exhibits. It is also an object-lesson to gardeners in general as to the best possible plants to choose for such a purpose in home decorations. The 1st prize in this class went to Messrs. JAMES CYPHER & SONS, whose group was prominent by the very rich colouration of the plants employed, whilst the "finish" was all that could be desired. Three well-balanced Kentias were employed at the back; Crotons were employed most effectively, such as *C. Warrenii*, highly coloured, and the best of the broad-leaved varieties, *C. Thompsonii* being a prominent feature. The groundwork in this group was of excellent taste, no overcrowding, but every plant affording good effect. The dwarf-growing, variegated *Saxifraga* in the front was in good keeping, and *Strobilanthes Dyerianus*, with *Jacaranda mimosifolia* and dwarf *Marantas* were most effective.

Mr. W. A. HOLMES was second in this class, his group being well arranged. The plants employed harmoniously blended, the silvery foliage plants set off the highly-coloured Crotons to good effect. The choice of material here was excellent, and the plants in the best of health, notably the Crotons. The 3rd prize was awarded to the LEAMINGTON NURSERYMEN AND FLORISTS, LTD., of Leamington. This group pressed the second-prize winner very closely indeed; the highly-coloured Crotons in the choicest variety, *Nandina domestica* (a Japanese plant), rarely ever seen employed in this manner, was most striking, the toning down by the employment of light green Ferns and *Eulalia japonica* variegata with *Dracæna Sanderiana* being done in the best possible manner. Mr. G. H. KENDRICK also showed well in this class, being very close up to the 3rd prize, with well-grown and well-coloured plants; the two corner pyramids at the front were, however, too heavy to be of the best effect.

In a smaller group class open to exhibitors in the county of Salop only, this being a mixed class wherein £20 was offered in three prizes, a space of 100 square feet was allotted. Mrs. SWANN, Halston House (gr. Mr. C. Roberts) was an easy 1st, with a miniature arrangement as seen in the larger classes. The Crotons and the *Ixoras* told with good effect, so also did *Dracæna Victoria* and a few good *Alocasias*.

E. BIRD, Esq., Shrewsbury (gr. Mr. H. Kennett) was 2nd. Flowering plants of *Cannas*, of *Tuberoses*, and *Lilium Harrisii* were effectively used, with a few good *Gloxinias*.

SPECIMEN PLANTS.

In the class for 15 stove and greenhouse plants, Messrs. CYPHER & SONS were easily 1st with fine examples of cultivation, embracing grand specimens of *Statice profusa*, 5 and 6 feet through, and of good colour; *Rondeletia speciosa major*, finely flowered and in the best

of health (a plant now rarely seen); two grand examples of *Ixora macrothyrsa* and another of *I. Shawii*; two large plants covered with flowers of *Chironia ixifera*, and a fine plant of *Erica Aitoniana*, with *Allamanda nobilis*, and three fine Palms at the back. Mr. VAUSE, Leamington, was a good 2nd in this class; his best plants were of *Erica Aitoniana*, *E. oblata purpurea*, and *E. exquisita*, all good, fresh specimens; there were two Crotons, well coloured, and three *Allamandas*.

Mr. MANNING, of Dudley, won the 3rd prize, his best plants being a good *Allamanda Hendersonii*, and a few good *Ixoras*, and one of *Rondeletia*, with two healthy *Kentias*.

For six stove and greenhouse plants, Messrs. CYPHER & SONS were again 1st, with a superb set of six plants worthy of the best days of specimen cultivation. These included two large plants of *Statice intermedia*, highly coloured, and of *S. profusa*, with two fine *Ixoras*, *I. macrothyrsa*, with huge trusses, and *I. Fraseri*, a mass of flower, *Erica oblata purpurea*, very fresh, and a grand plant of *Allamanda nobilis*, a mass of flower, made up this half-dozen. Mr. VAUSE was 2nd in this class also, his best plants being of *Erica Austiniana*, a grand specimen, and very fresh; *E. Aitoniana*, a fine plant, and two *Ixoras*, hardly at their best.

For six stove or greenhouse plants (local class), Lord HARLECH, of Brogyntyn, Oswestry (gr. Mr. Lambert), was 1st with good examples of *Eucharis amazonica*, *Clerodendron fallax*, *C. Balfourianum*, and *Ixora macrothyrsa*, with *Allamanda Williamsi*, a very pretty and useful species.

Mr. SWANN was 2nd in this class, staging a fine *Kentia australis*, two good plants of *Ixora Williamsii*, and a good example of *Croton Warrenii*. Mr. JAS. TARRANT, of Shrewsbury, was placed 3rd, having in his exhibit good plants of *Ixora* and *Clerodendron*.

The class for 30 stove and greenhouse plants at Shrewsbury, to be grown in 10-inch pots, has been for years one of the best classes in the show from a cultural point of view. For the first time Messrs. CYPHER & SONS have this year won the 1st prize, a good proof of the excellence of the exhibits. In their exhibit, the *Ixoras* were a particularly strong feature, the best being the fine young specimens of *Ixora macrothyrsa*, of which there were five plants; fine dwarf plants of *Statice intermedia* were also staged; also *Rondeletia speciosa major*, and some good Crotons and Palms.

Mr. VAUSE came in a good 2nd in this class with several highly-coloured *Bougainvilleas*, a few dwarf and sturdy *Ericas*, *Ixoras*, Crotons and *Statice*.

The 3rd prize was awarded to Mr. SWANN, Halston Hall (gr. Mr. C. Roberts), for several capital dwarf *Ixoras*, well flowered; also of *Dracæna Victoria*, and of Crotons, with two or three good Palms. *Dracæna Godseffiana* was shown here in good character.

For 12 stove and greenhouse plants, also in 10-inch pots, Sir A. MUNTZ, Bart., M.P., Dunsmore, Rugby (gr. Mr. H. Blakeway) was 1st with well-grown young plants; these consisted of three good *Ixoras*, two of *Allamandas*, *Pancratium fragrans*, an excellent *Cycas*, and some good Crotons.

For six ornamental fine foliage plants, Messrs. CYPHER were also 1st with three finely-coloured Crotons, notably the old *C. angustifolius*, and of *C. Countess*, with three Palms, of which *Phoenix rupicola* and *Kentia Forsteriana* were the best.

Mr. W. VAUSE was 2nd in this class, *Croton Queen Victoria* being his best specimen.

Begonias.—There were several exhibits in the classes for a group of tuberous-rooted *Begonias* arranged for effect on table spaces of 15 feet by 4 feet. The 1st prize was won by Messrs. BLACKMORE & LANGDON, Twerton Nurseries, Bath; the 2nd by Messrs. T. S. WARE, LTD., and the 3rd by Mr. DAVIS, of Pershore. The quality observed in these collections was beyond praise.

CUT FLOWERS.

Collection of Hardy Perennials, Roses excluded.—Messrs. GUNN & SONS, Olton, were awarded the 1st prize in this class for clean, fresh examples of *Phloxes* *Josephine Gerbaux*, *L'Aiglon*, and *Sylphide*; *Campanula Mariesi*, *Cimicifuga japonica*, *Coreopsis grandiflora*, and *Lilium longiflorum*; 2nd, Messrs. G. GIBSON &

Co., Bedale; 3rd, Mr. M. PRICHARD, Christchurch, Hants.

Dahlias.—In a class for a collection of Cactus or Decorative Dahlias, Mr. J. WALKER, Thame, was an easy 1st, with a pleasing arrangement of Cactus varieties displayed in bamboo stands, vases, and ornamental baskets; 2nd, Messrs. KEYNES, WILLIAMS & Co., Salisbury.

Mr. J. WALKER also took the premier position in the class reserved for miscellaneous Dahlias with a very handsome lot of flowers artistically arranged; 2nd, Mr. W. TRESEDER; 3rd, Messrs. KEYNES, WILLIAMS & Co.

Collection of Phloxes.—Mr. M. PRICHARD was placed 1st with bold clumps of the leading varieties; 2nd, N. G. HARRIES, Esq., Wightwick, Wolverhampton (gr. Mr. J. Pugh); 3rd, Mr. F. BONSKELL, Market Bosworth.

Amongst 12 competitors who staged in a class for an arrangement of cut flowers (Orchids excluded) suitable for a dinner table, to occupy a space 4 feet by 4 feet, Mrs. J. NIXON, Alderley Edge, was placed 1st. The flowers relied upon were *Gloriosa superba* and *Francoa ramosa*; 2nd, Miss J. HIRST, King's Heath, who used flowers of a lovely pink *Carnation*, relieved with *Asparagus* and *Selaginellas*; 3rd, Mrs. H. B. VERNON, Bowden, Cheshire; 4th, Miss POPE, King's Norton.

SWEET PEAS.

Arrangement of Sweet Peas were exhibited on tables (open to ladies only). There were 16 exhibits in this class, and the one from Mrs. E. WINCHESTER, Northfield, pleased the judges best; 2nd, Mrs. W. MARPLE, Penkridge.

Competition was also keen for the prizes offered by Mr. ROBERT SYDENHAM, Birmingham, for Sweet Peas, to be shown in his rural table decorations. 1st, Mrs. W. MARPLE; 2nd, Alderman HOWELL DAVIES, M.P., Bristol (gr. Mr. J. T. Curtis); 3rd, Mrs. G. D. FORD, Acocks Green.

Mr. T. JONES, Ruabon, won the 1st prize in Mr. Sydenham's class for 18 bunches of Sweet Peas; Mr. W. STANSBURY, Hope-under-Dinmore, took the 2nd prize; 3rd, A. HUGHES, Esq., Knowle (gr. Mr. T. Parry).

Of the 15 competitors for the 25 Guineas Silver Challenge Cup and £2, offered as 1st prize by Mr. Henry Eckford, Wem, for 18 varieties of Sweet Peas, Mr. T. JONES, Ruabon, was placed 1st with flowers of a high order of merit; 2nd, P. YORKE, Esq., Wrexham (gr. Mr. G. Aitkens) with a beautifully fresh lot of flowers; 3rd, R. BATHURST, Esq., Chudleigh (gr. Mr. G. Powney).

The Rev. E. BROWN, Bedstone Rectory, Bucknell, won 1st prize for six varieties of Sweet Peas offered by Messrs. Jones & Sons, Shrewsbury; 2nd, A. E. PERKINS, Esq., Sundorne Castle.

The 1st prize for 12 varieties of Sweet Peas offered by Messrs. Baker's, Wolverhampton, was won by Mr. T. JONES, Ruabon, with a wonderfully even lot of flowers of much merit; Mr. T. PROCTOR, Carnforth, was a good 2nd.

CARNATIONS.

Owing to the cool, late season, these flowers were shown in excellent condition. The 1st prize for a collection of Carnations and Picotees, shown with their own foliage and buds, and not dressed, space 6 feet by 4 feet, was awarded to Messrs. BLACKMORE & LANGDON, Bath, who had good flowers of *Volunteer*, *Bridegroom*, and *Delicate*; 2nd, Mr. C. H. HERBERT, for a well-arranged collection containing flowers of good substance and quality; 3rd, Mr. A. R. BROWN, King's Norton.

The best collection of Tree Carnations came from Mr. A. F. DUTTON, Iwer, Bucks, with exquisite flowers of Mrs. T. W. Lawson, Robert Craig, Enchantress, and President, all artistically arranged; 2nd, Mr. S. MORTIMER, Rowledge, Farnham.

In a class for 12 varieties of Carnations or Picotees, three blooms of each, C. ALCOCK, Esq., Blundellsands, Liverpool, was placed 1st, Mr. A. R. BROWN, King's Norton, 2nd, and Mrs. C. H. HERBERT, Acocks Green, 3rd.

Mrs. J. W. LEAVES, Nottingham, had the best 12 bunches of stove and greenhouse flowers, and Sir A. MUNTZ, Bart., Rugby, the best six bunches.

In a class for 12 bunches of annuals, the Rev. A. BROWN, Bedstone Rectory, Bucknell, was

awarded 1st prize, and Mr. A. MYERS staged the best six trusses of single, and six trusses of double Zonal Pelargoniums.

Messrs. R. HARKNESS & Co., Hitchin, won the 1st prize in a class for 24 Roses, and Messrs. PERKINS & SONS, Coventry, secured the premier award offered for 18 blooms.

There were three entries in a class provided for cut Roses, and of these Mr. GEORGE PRIMER, Oxford, was placed 1st. He had excellent blooms of Muriel Grahame, Killarney, Liberty, and Madame Abel Chatenay; 2nd, Mr. J. CROSSLING, Penarth, with a creditable display; 3rd, Mr. G. H. TOWNDROW, Malvern Link.

Messrs. BOTTOMLEY & BURTON, Elland, staged the best 24 Show or Fancy Dahlias, and Mr. F. BUNN, Newton, Ledbury, had the best 12 Cactus varieties in a class reserved for amateurs.

FLORISTS' DEVICES.

The 1st prize for a bride's bouquet with Orchids and two bridesmaids' bouquets without Orchids was won by Messrs. FELTON, Hanover Square, London. The bride's bouquet was composed of long sprays of Odontoglossums and two white Cattleyas. The bridesmaids' bouquets were made of pink Carnations; 2nd, Mr. W. J. GARNER, Hale, Altrincham.

The last-named exhibitor staged the best bouquet for the hand, and Messrs. PERKINS & SONS, Coventry, had the best bride's bouquet, Mr. W. J. GARNER, Hale, being second in the last-named class. He also took 1st prize for a bouquet for the hand (Orchids excluded).

The winning shower-bouquet of Cactus Dahlias came from Mr. W. TRESEDER, Cardiff, who used scarlet and cream-coloured flowers; 2nd, Mr. W. J. GARNER.

Messrs. FELTON & SONS took 1st prizes in the classes for a featherweight bouquet and a floral harp, with dainty examples in each case.

Messrs. POPE & SON, King's Norton, were awarded the 1st prize for a floral cross. The groundwork consisted of white Asters, over which flowers of the small bright scarlet Liliun chalcidonicum were arranged—a bold and pleasing contrast.

Messrs. POPE & SON, King's Norton, showed the leading basket of cut flowers (Orchids excluded).

VEGETABLES.

In spite of lamentations over an adverse season, not only were the collections in the respective classes far in excess of what have been seen in any previous year, but the quality of the best was quite up to the standard merit, and some capable critics thought it was better than ever. In any case the efforts of the society to popularise the vegetable classes (by first getting all the leading trade firms to put their classes on an equal footing, making them all for nine kinds only; and in the second place reducing their own chief class to the same number of dishes and offering for it greatly enhanced prizes, but specially in offering a champion prize of 10 guineas for the best collection of nine kinds in the show), proved to be remarkably successful, and with such response it is hoped this liberal action will be repeated.

It was interesting to note, however, that the champion prize fell to the 1st prize collection in the society's class. Hence no trade firm could feel any special gratification or sense of humiliation. The coveted prize fell to an excellent grower of vegetables in the person of Mr. J. GIBSON (gr. to the Duke of PORTLAND, Welbeck Abbey), who, joining together the society's 1st prize of £10 and the champion prize of 10 guineas, thus wins with nine dishes of vegetables the largest sum ever offered. The society published the information that to each dish shown for this champion prize a maximum of 7 points was to be awarded if merited. The actual awards were as follow:—

	Points.
Cauliflowers	7
Celery	5½
Leeks	6
Carrots	7
Onions	6
Potatos	7
Peas	7
Runner Beans	7
Tomatos	6½
Total	59

In the same class Mr. E. BECKETT, V.M.H. (gr. to Lord ALDENHAM, Elstree, Herts.), was 2nd, having in his collection capital Scarlet Perfection Carrots, Goldfinder Potatos, Musselburgh Leeks, and fine Celery. Mr. J. HUDSON, of Leicester, was 3rd; and Mr. B. ASHTON (gr. to the Earl of LATHOM, Ormskirk), 4th.

Messrs. Jas. Carter & Co.'s Class.—Here Mr. J. Dymock (gr. to G. D. FABER, Esq., M.P., Wallingford), was a good 1st, having fine Defiance Cauliflowers, Incomparable Celery, Holborn Model Leeks, Scarlet Perfection Carrot, Record Onions, Windsor Castle Potatos, Scarlet Emperor Runner Beans, Quite Content Peas, and Duke of York Tomatos. Mr. F. J. BARRETT, Overton-on-Dee, was 2nd with excellent samples. Mr. A. M. SEARLE, Castle Ashby Gardens, was 3rd, and Mr. ASHTON 4th. There were six collections in the class.

Messrs. Sutton & Sons' Class.—With five entries, several old competitors having fallen out, Mr. GIBSON was again 1st, having very fine Prizetaker Leeks, Autumn Mammoth Cauliflowers, Ailsa Craig Onion, Intermediate Carrot, Best of All Runner Beans, Perfection Tomatos, Centenary Peas, and Ideal Potatos. Mr. E. BECKETT, who was 2nd, had very fine examples of Prizetaker Leeks, Solid White Celery, Windsor Castle Potatos, also fine Cauliflowers, Peas, and Tomatos. Mr. J. HUDSON was 3rd, and Mr. ASHTON 4th.

Messrs. Webb & Sons' Classes.—Here, out of nine collections, Mr. BECKETT was a good 1st, having superb Champion Leeks, Mammoth Red Celery, Ailsa Craig Onions, Prizewinner Carrots, Stourbridge Marrow Peas, Jubilee Tomatos, Exhibition Runner Beans, Chieftain Potatos, and Mammoth Cauliflowers. Mr. J. DYMCK was 2nd, and Mr. BARRETT 3rd; other prize-winners in the class being Messrs. ASHTON, SEARLE, and BARSON.

Messrs. Bull & Sons' Class.—This competition brought but two competitors, Mr. DYMCK winning easily with fine dishes, these being practically repeats of what have already been mentioned. Mr. J. BARSON was 2nd.

Mr. R. Sydenham's class brought 12 collections, the 1st prize falling to Mr. S. J. Baker (gr. to Sir D. DUCKWORTH-KING, Exeter). He had Bibby's Defiance Leek, Autumn Giant Cauliflower, Excelsior Onions (very fine), Champion Scarlet Runner Beans, St. Valery Carrots, Gladstone Peas, Perfection Tomatos, and Factor Potatos. Mr. H. FOLKES (gr. to the Right Hon. J. F. HALSEY, Herts.), was 2nd; Mr. F. J. Clark (gr. to MARK FIRTH, Esq.), 3rd; and Mr. BARRETT 4th. No fewer than nine prizes were awarded in this class.

In the Society's class, devoted to the county of Salop alone, Mr. Mills (gr. to Captain HEYWOOD LONSDALE) was 1st.

Other collections were presented for prizes offered by Messrs. R. SMITH & Co., Worcester; Mr. E. MURRELL, Shrewsbury; Messrs. JAS. BACKHOUSE & Co., York; and Mr. J. WILSON, Hereford; but all the best exhibits have been mentioned.

Other classes for small collections or single dishes brought remarkable competition. The best three dishes of Potatos among 24 entries came from Mr. E. DEAKIN, Hay Mills, but unnamed. Mr. ASHTON came 2nd with excellent Monarch, Eighty Fold, and Duke of York. Mr. W. H. LEVETT, Wellington, being 3rd.

With a single dish, Mr. McPherson (gr. to the Earl of LONDESBOROUGH, York) was 1st. With six Tomatos, Mr. J. HUDSON, of Leicester, took 1st place. With a brace of Cucumbers, that veteran grower, Mr. J. LOCKIE, of Huntingdon, was 1st; Mr. BECKETT coming 2nd. Mr. BECKETT, however, was 1st for a dish of French Beans, and Mr. J. GIBSON had the best dish of Peas. The best Runner Beans came from Mr. DEAKIN, Cauliflower from Mr. D. THOMAS, Corend; Celery from Mr. FOLKES, Parsnips from Mr. BARKER, and Carrots from Mr. J. H. PUGH, Newtown.

It is not possible further to particularise the Awards which were in other classes very numerous, or to advert to the competition in the cottagers' classes, other than to mention the very fine quality seen in their exhibits.

NON-COMPETITIVE EXHIBITS.

Messrs. DOBBIE & Co., Rothesay, sent a large collection of Phloxes, Violas, and Pansies, also Sweet Peas and a few miscellaneous flowers.

Messrs. JAS. BACKHOUSE & SONS, York, had a nicely-arranged rockery planted with such things as Campanulas, Gentianas, dwarf Spiræas, and Podophyllum Emodi, bearing large scarlet, egg-shaped fruits. Dwarf shrubs were also employed with good effect, and graceful Bamboos formed a pleasing setting at the back.

Messrs. WALLACE & Co., Colchester, contributed one of their characteristic displays of hardy flowers, in which were excellent examples of Astilbe Davidii, Physostegia virginiana, Phloxes, hybrid Gladioli, new varieties of Montbretia, and several Liliums.

Mr. ALBERT MYERS, Sutton Lane Nurseries, Shrewsbury, sent Zonal Pelargoniums as growing plants and cut flowers.

Messrs. DICKSONS, Chester, staged a handsome group of hardy flowers, including superb examples of Romneya Coulteri, Scabiosa caucasica, Phloxes, and Roses.

Messrs. BAKERS Wolverhampton, had a comprehensive display of cut flowers, in which were hybrid Gladioli, Sweet Peas, Roses, single, show, Cactus and Pæony-flowered Dahlias.

The KING'S ACRE NURSERIES, Hereford, sent a splendid exhibit of fruit trees in pots, and gathered fruit. Among the trees we noted specimens of Jefferson and Magnum Bonum (white) Plum, Conference, Marguerite Marillat, and Louise Bonne of Jersey Pear, Worcester Pearman and Washington Apple, Gros Maroc and Lady Hutt Grape, and a well-trained fan-shaped Sea Eagle Peach, bearing 41 fruits. The same firm also had on another table a collection of Roses, Carnations, and miscellaneous flowers.

Messrs. ISAAC HOUSE & SON, Westbury-on-Trym, showed a pretty group of Phloxes and other hardy flowers.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, Chelsea, arranged a group of stove plants in one of the half-circular recesses in the marquee, containing the premier groups of miscellaneous plants exhibited in competitive classes. The plants were disposed in a manner frequently adopted by Messrs. VEITCH, the main characteristics of which consist in having wings composed of fine specimens of various species arranged over a Fern-covered ground and extending at the back of the group through the centre, but the front of the centre was composed of choice Orchids in flower, making at once a notable and showy feature in the display. The specimen plants were all of the highest cultivation. They included excellent Codiaums (Crotons), Dieffenbachia Jenmanii, Gleichenia dichotoima, Nephrolepis exaltata superba, several species of Davallia, Platycerium angolense, and other Ferns; Ixoras, Alocasia macrorrhiza variegata, Dracæna Sanderiana, Aralia elegantissima, Cocoloba pubescens, Ixoras, Tillandsia zebrina major (in flower), Anthuriums, Dracæna Victoria, Cordylines, Rhododendron javanicum-jasminiflorum hybrids, Ceratopetalum gummi-ferum, and beautifully-coloured plants of Phyllanthus nivosus and Bertolonia "Mme. A. Bleu." Over these plants were suspended well-pitched plants of Nepenthes Burkei excellens, N. Balfouriana, N. Mixta, and others. The firm had also a group of flowers of varieties of tree or winter-flowering Carnations, &c.

Mr. AMOS PERRY, Hardy Plant Farm, Enfield, Middlesex, furnished the similar recess on the opposite side of the marquee with a water garden, arranged with aquatic plants on either side of the water. The conception and execution of this exhibit were admirable. The water, though necessarily of small area, was ornamented with Nymphaea flowers and foliage, arranged in a perfectly natural manner; other aquatics were contained in suitable positions in the water, and gold-coloured fish could be seen gliding under the Nymphaea leaves in the most realistic manner. At the back and in the centre of the group were two or three specimens of Gunnera manicata, and the semi-aquatic plants throughout the exhibit were justified in their selection, and their disposition was carried out with knowledge of the habitat of each species.

Mr. E. MURRELL, Shrewsbury, staged a magnificent collection of Roses and several boxes of Gladioli.

Messrs. WEBB & SONS, Stourbridge, set up an assortment of fruit, vegetables, cut flowers, and small plants of Gloxinias.

Messrs. JONES & SONS, Shrewsbury, staged a large collection of Sweet Peas, Carnations Zonal Pelargoniums, and floral devices.

Mr. ROBERT SYDENHAM, Birmingham, showed Sweet Peas in rustic stands and other receptacles.

The most extensive collection of Sweet Peas came from Mr. HENRY ECKFORD, Wem, Salop. From Messrs. J. STARK & SON, Great Ryburgh, Norfolk, came a pretty stand of Sweet Peas, including some unnamed seedlings.

MESSRS. HOBBIES, LTD., Dereham, Norfolk, filled the whole of one side of the centre stage in one tent with a particularly good exhibit of Roses as growing plants and cut blooms. Sweet Peas and Dahlias were also well shown.

MESSRS. WEBB & BRAND, Saffron Walden, sent a number of excellent spikes of Hollyhocks, &c.

MESSRS. HUGH LOW & CO., Bush Hill Park, N.E., made a good display with flowers of American varieties of Carnations. Also Orchids, Ericas, Roses, Figs in pots, and Orange bushes bearing fruit.

MESSRS. WATSON & SONS, Clontarf Nurseries, Dublin, had a dainty arrangement of choice cut Carnations.

MESSRS. T. ROCHFORD & SONS, Broxbourne, Herts., exhibited a large group of well-grown plants of *Nephrolepis todeoides* and two specimens of the new pink-flowered *Spiraea Peach Blossom*.

MESSRS. RICHARD SMITH & CO., Worcester, showed a miscellaneous collection of indoor and outdoor flowers and hardy shrubs.

MESSRS. ALEX. DICKSON & SONS, Newtownards, had a very bright collection of Roses.

MESSRS. GUNN & SONS, Olton, had a fine lot of shrubby Phloxes in many choice varieties.

MESSRS. HEWETT & CO., Birmingham, had a collection of hardy flowers.

Mr. J. FORBES, Hawick, N.B., contributed Pentstemons in numerous and excellent varieties, also Phloxes and Carnation flowers; these latter exhibited on cardboard.

There were many other non-competitive exhibits, but we have not the space to refer to them in detail.

HONORARY AWARDS.

LARGE GOLD MEDALS.

Jas. Veitch & Sons, Ltd., Chelsea, S.W.; Amos Perry, Enfield; King's Acre Nurseries, Ltd., Hereford; Edwin Murrell, Shrewsbury.

SMALL GOLD MEDALS.

Thos. Rochford & Sons, Ltd., Broxbourne; Robert Bolton, Carnforth; James Backhouse & Sons, Ltd., York; Bakers' Nurseries, Codsall, Wolverhampton; E. Webb & Sons, Stourbridge; Jones & Sons, Ltd., Shrewsbury; Hobbies, Ltd., Dereham; Henry Eckford, Wem; George Bunyard & Co., Ltd., Maidstone.

SILVER-GILT MEDALS.

Gunn & Sons, Olton, Birmingham; L. R. Russell, Richmond; Richard Smith & Co., Ltd., Worcester; John Peed & Son, Roupell Park Nurseries, Norwood, S.E.; Dobbie & Co., Rothsay, N.B.; R. Wallace & Co., Kilnfield Gardens, Colchester; Dicksons, Ltd., Chester; Isaac House & Son, Westbury-on-Trym, Bristol; Robert Sydenham, Tenby Street, Birmingham; Alex. Dickson & Sons, Ltd., Newtownards, Co. Down; Geo. Prince, Longworth, Berks.

SILVER MEDALS.

Hewitt & Co., Ltd., Solihull; John Forbes, Hawick; Clibrans, Altrincham; John Mattock, Oxford; Hugh Low & Co., Enfield; Thos. W. Darlington, Carnforth; Webb & Brand, Saffron Walden; Albert Myers, Shrewsbury; Felton & Son, Hanover Square, W.; G. Stark & Son, Great Ryburgh; W. & J. Brown, Peterborough; Jarman & Co., Chard; Pritchard & Son, Shrewsbury.

BRONZE MEDALS.

J. Cooper, Chipping Norton; H. N. Ellison, West Bromwich; B. R. Davies & Sons, Yeovil; Vincent Slade, Taunton; Wm. Watson & Sons, Ltd., Dublin; W. L. Pattison, Shrewsbury; A. W. Thorpe, Lichfield; A. Bastock, Moseley; John E. Knight, Wolverhampton; Hugh Aldersey, Esq., Chester.

AWARDS OF MERIT

were awarded to Mr. Amos Perry, Enfield, for *Tamarix Hispidula* 'Estivalis'; Messrs. Alex. Dickson & Son, Newtownards, Co. Down, for *Rose W. E. Lippiatt* and *Rose Harry Kester*;

to Mr. L. R. Russell, Richmond, for *Hedera dentata* variegata; to Hugh Aldersey, Esq., Chester, for Sweet Peas "Syeira Lee" and "Helen Grosvenor"; and to Messrs. Dobbie & Co., Rothsay, for Phlox "The Queen."

DEBATING SOCIETIES.

PITSFORD & DISTRICT HORTICULTURAL.—This society held its first flower show in the grounds of Pitsford Hall on Thursday, August 8, by permission of Mr. H. E. Courage; and so successful was the initial effort that it will doubtless become an annual function. After settling all accounts a balance of £30 remained.

PETERBOROUGH AND DISTRICT HORTICULTURAL.—The 2nd annual exhibition of this society was held on Wednesday, August 14. The entries numbered 903, compared with 395 last year. Unfortunately the patronage the show deserved was ruined by rain. The exhibits generally were of a high order. The strongest section in the show was that for Cottagers, the produce in these classes being exceptionally good.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending August 21.

A cold and wet week.—For more than a fortnight the days have all been more or less unseasonably cold. During the same period, however, the nights proved as a rule rather warm. On the warmest day of the past week the highest reading in the thermometer screen was only 70°, and on the coldest day never exceeded 60°. On the two coldest nights the thermometer exposed on the lawn indicated readings within respectively 8° and 7° of the freezing point. At 2 feet deep the ground is still 2° colder, but at 1 foot deep is now 4° colder, than is reasonable. Rain fell on each day of the week, the total fall exceeding three-quarters of an inch. On one day, during a thunder-shower, rain was falling for three minutes at the average rate of an inch an hour. These rains have not proved sufficiently heavy to re-start the percolation gauge on which short grass is growing, through which no measurable quantity of rain-water has now passed for a fortnight. Small quantities have, however, come through the bare soil gauge on each of the last three days. The sun shone on an average for 6 hours a day, which is three-quarters of an hour a day more than is usual in August. The winds were again high, but as was the case in each of the two preceding weeks in no hour did the mean velocity exceed 14 miles, direction west. The average amount of moisture in the air at 3 o'clock in the afternoon was three per cent. in excess of a seasonable quantity for that hour. *E. M., Berkhamsted, August 21, 1907.*

MARKETS.

COVENT GARDEN, August 21.

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Alstromerias, per dozen bunches	2 0-4 0	Lilium tigrinum	1 6-2 0
Asters, per dozen bunches	3 0-4 0	Lily of the Valley, p. dz. bunches	4 0-6 0
Bouvardia, per dz. bunches	4 0-6 0	— extra quality	8 0-12 0
Calla aethiopica, p. dozen	1 6-2 6	Marguerites, white, p. dz. bunches	2 0-3 0
Carnations, per dozen blooms, best American	1 6-3 0	— yellow, per dz. bunches	1 6-2 0
— smaller, per doz. bunches	9 0-12 0	Mignonette, per dz. bunches	2 0-3 0
— Malmaisons, p. dozen blooms	6 0-10 0	Odentoglossum crispum, per dozen blooms	2 6-3 0
Cattleyas, per doz. blooms	12 0-15 0	Pancratiums, per dozen fls.	3 0-4 0
Chrysanthemums, best blooms, p. dozen	2 0-2 6	Pelargoniums, show, per doz. bunches	4 0-6 0
— small, per doz. bunches	3 0-4 0	— Zonal, double scarlet	4 0-6 0
— maximum	1 0-2 0	Poppies, Iceland, doz. bunches	4 0-8 0
Coreopsis, per doz. bunches	2 0-3 0	Pyrethrum, per dozen bunches	2 0-4 0
Cornflower, per dz. bunches	1 0-2 0	Rhodanthé, per dz. bunches	3 0-4 0
Dahlias, per dozen bunches	3 0-4 0	Roses, 12 blooms, Niphetos	1 0-3 0
Eucharis grandiflora, per doz. blooms	2 0-3 0	— Bridesmaid	2 0-3 0
Gaillardias, per dz. bunches	2 0-3 0	— C. Testout	2 0-3 0
Gardenias, per doz. blooms	1 6-2 0	— General Jacqueminot, per doz. bunches	1 0-2 0
Gladiolus, The Bride, per doz. bunches	2 0-3 0	— Maréchal Niel	1 6-3 0
— Branchleyensis, various	3 0-5 0	— Kaiserin A. Victoria	1 6-3 0
Gypsophila elegans p. dz. bunches	2 0-3 0	— Mrs. J. Laing	1 0-3 0
— paniculata, per dozen bunches	2 0-3 0	— C. Mermet	1 0-3 0
Lapageria alba, per dozen	1 0-1 6	— Liberty	2 0-4 0
Lilium aurum	2 0-3 0	— Mad. Chateaufort	1 0-3 0
— lancifolium, album and rubrum	1 6-2 0	Scabious, per doz. bunches	3 0-4 0
— longiflorum	2 0-3 0	Statice, per dozen bunches	2 6-3 0
		Stephanotis, per dozen trusses	3 0-5 0
		Stocks, per dozen bunches	2 0-3 0
		Sweet Peas, p. doz. bunches	1 0-3 0
		Sweet Sultan, per dozen bunches	3 0-4 0
		Tuberose, per doz. blooms	0 4-0 6

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Adiantum cuneatum, per dozen bunches	4 0-6 0	Galax leaves, per dozen bunches	2 0-2 6
Asparagus plumosus, long trails, per doz.	8 0-12 0	Hardy foliage (various), per dozen bunches	2 0-6 0
— medium, bunch	1 6-2 0	Ivy leaves, bronze	2 0-2 6
— Sprenger	0 6-1 0	— long trails per bundle	1 6-3 0
Berberis, per doz. bunches	2 0-2 6	— short green, doz. bunches	2 0-3 0
Croton leaves, bch.	1 0-1 6	Moss, per gross	4 0-5 0
Cycas leaves, each	1 6-2 0	Myrtle (English), small-leaved, doz. bunches	4 0-6 0
Fern, English, per dozen bunches	1 0-2 0	— French, dozen bunches	1 0-1 6
— French, dozen bunches	1 0-3 0	Smilax, p. dz. trails	1 6-2 6

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Ampelopsis Veitchii, per dozen	6 0-8 0	Ficus repens, p. dz.	4 0-6 0
Aralia Sieboldi, dz. larger	4 0-6 0	Fuchsias, per doz.	3 0-5 0
— smaller	9 0-12 0	Heliotropiums, per dozen	3 0-4 0
Araucaria excelsa, per dozen	12 0-30 0	Hydrangea Hortensia, per dz.	8 0-12 0
Aspidistras, green, per dozen	18 0-30 0	— paniculata, per dozen	9 0-18 0
— variegated, dz.	30 0-42 0	Kentia Belmoreana, per dozen	12 0-18 0
Asparagus plumosus nanus, doz.	9 0-12 0	— Fosteriana, dz.	12 0-21 0
— Sprenger, dz.	9 0-12 0	Kochia scopulorum, per dozen	6 0-9 0
— tenuissimus, per dozen	9 0-12 0	Latania latifolia, per dozen	12 0-18 0
Asters, per doz.	3 0-6 0	Lilium longiflorum, per dz.	12 0-24 0
Campanulas, p. dz.	6 0-9 0	— lancifolium, per dozen	12 0-18 0
Chrysanthemums, per dozen	4 0-8 0	Lily of the Valley, per dozen	10 0-12 0
— best disbudded	12 0-18 0	Marguerites, white, per dozen	4 0-8 0
Clematis, per doz.	8 0-9 0	— yellow	12 0-18 0
— in flower	12 0-18 0	Pelargoniums, in variety, doz.	4 0-6 0
Cocos Weddelliana, per dozen	9 0-18 0	— Mde. Crousse and Galilee, p. dozen	4 0-6 0
Coleus, per dozen	2 0-4 0	— Zonal, per dz.	4 0-6 0
Coreopsis, per doz.	4 0-5 0	— Show	6 0-9 0
Crassula thalictroides, per dz.	9 0-12 0	Petunias, double, per dozen	4 0-8 0
Crotons, per dozen	12 0-30 0	Roses, Rambler, each	3 0-7 6
Cyperus alternifolius, dozen	4 0-5 0	Selaginella, dozen	4 0-6 0
— laxus, per doz.	4 0-5 0	Spiraea japonica, per dozen	5 0-8 0
Dracenas, per doz.	9 0-24 0	Verbena, Miss Willmott, doz.	4 0-6 0
Eucalyptus, per dz.	4 0-9 0	Zinnias, per dozen	3 0-4 0
Ferns, in thumbs, per 100	7 0-10 0		
— in small and large 60's	12 0-20 0		
— in 48's, per dz.	4 0-10 0		
— in 36's, per dz.	10 0-18 0		
Ficus elastica, per dozen	8 0-10 0		

Fruit: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Apples, per box, Tasmanian	5 0-6 0	Melons (Cantaloupe), each	0 3-0 4
— Sturmer Pippins	12 6-13 6	Nectarines (English), per doz.	8 0-15 0
— English, p. bshl.	2 6-4 6	— 1st quality	8 0-15 0
— 1st sieve	1 3-3 0	— 2nd	2 0-4 0
Apricots (French), per box	1 2-1 4	— French, p. box	10 0-10 0
— French, cases	2 0-2 6	Nuts, Cobnuts, per doz. lb.	2 6-3 0
— French, 1/2 sieve	4 0-5 0	— Almonds, bags	54 0-—
Bananas, bunch	5 0-—	— Brazil, new, per cwt.	40 0-42 6
— No. 2 Canary	6 0-6 6	— Barcelona, bag	32 6-—
— No. 1	7 0-7 6	— Cocoa nuts, 100 lb.	12 0-17 0
— Giants	8 0-—	Oranges (Australian), per box	8 0-14 0
— Jamaica	5 0-5 6	— Natal, per case	6 0-8 0
— Loose, per dz.	0 9-1 3	— Naples, p. case	8 0-10 0
Cranberries, case	8 0-8 6	— Navel, p. case	10 0-10 6
Currants (English), Red, 1/2 sieve	2 0-2 6	— Murcia, p. box	10 0-12 0
— Black (English), 1/2 sieve	6 0-6 6	Peaches (English), per dozen	1 6-9 0
Dates (Tunis), doz. boxes	1 3-1 6	— 1st quality	1 6-9 0
Figs (Guernsey), p. dozen	1 0-4 0	— 2nd	1 0-3 0
Gooseberries (English), 1/2 sieve	1 6-3 0	— French, p. box	1 3-1 6
Grape Fruit, case	11 0-12 0	Pears (English), 1/2 sieve	1 9-2 6
Grapes (English), Hambro's, p. lb.	0 6-1 0	— per bushel	2 6-4 6
— Alicante, per lb.	0 8-1 0	— French Williams, per crate	4 6-8 6
— Gros Maroc, per lb.	0 9-1 3	— French Williams Bon Creten, per box	2 9-3 9
— English Muscats, per lb.	0 9-2 6	— (Californian), per box	7 0-8 0
— Canon Hall, per lb.	2 0-4 0	Plums (English), p. 1/2 sieve	2 0-2 6
— Belgian Hambro's, per lb.	0 6-0 9	— Prince of Wales	2 3-2 6
— Lisbon, p. case	8 0-11 0	— Orleans	2 3-3 0
— Dena, barrel	5 0-6 0	— Morocco	2 0-—
Lemons: Messina, case	9 0-13 0	— Rivers	1 9-2 0
— Naples, p. case	17 0-22 0	— Czars	2 0-2 6
Lychees, per box	1 0-—	— Californian, box	6 0-6 3
Mangoes, per doz.	6 0-12 0	— French, 1/2 sieve	1 6-5 0
Mandarines, Natal	1 3-1 9	— Italian, basket	1 6-1 9
— Naartjes, box	6 0-8 0	— French, 1/2 sieve	7 6-8 6
Melons (Guernsey), each	0 9-2 0	— Spanish, 1/2 sieve	11 0-13 6
— French, Rock, each	1 6-3 0	Pineapples, each	2 0-2 6
— Valencia, per case	5 6-8 6	Raspberries (English), handle basket	1 6-1 9
		— English, p. dz. punnets	3 0-5 0

Vegetables : Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Artichokes (French), per dozen	1 0 1 3	Mint, doz. bunches	0 9-1 0
Aubergines (French), per doz.	1 0-1 3	Mushrooms (house), per lb.	0 8-0 10
Beans (French), per bag	3 0 1 0	— buttons, per lb.	0 10 —
— Broad (English), per bushel	2 0 —	— "Broilers" p. lb.	0 5-0 6
— Home-grown, per bushel	2 0 —	Mustard and Cress, per dozen pun.	1 0-1 6
Butter, per lb.	1 3 1 6	Onions (Spanish), per case	5 0 —
Cabbages, per doz.	0 6 0 9	— Dutch, per bag	4 0 —
— Greens, bag	1 0 —	— pickling, per bushel	2 0-2 6
— red, per dozen	2 0 —	— Spring, pr. dz. bunches	1 6 2 0
Carrots (English), dozen bunches	1 0 —	Peas (English), per bushel	1 6 —
— washed, per bag	3 0 —	— English, p. bag	2 6-4 0
Cauliflowers, per dozen	2 0-2 6	Parley, 12 bunches	1 6-2 0
— per tally	4 0-5 0	— 1 bushel	1 0-1 6
Chow Chow (Szechuan), p. dozen	3 0 —	Radishes (Guernsey), doz. bun.	0 4-0 6
Cucumbers, p. dz.	1 6-2 6	Salsify, p. dz. bds.	3 6 —
Endive, per dozen	2 0 —	Spinach, English, per bushel	0 9-1 0
Horseradish, foreign, per doz. bundles	13 0-14 0	Tomatoes:—	
Leeks, 12 bundles	1 6 —	— French, p. crate	3 0-3 6
Lettuce (English), doz. bunches	0 1-0 6	— selected, per dozen lbs.	3 0 3 3
Marrow (English), per tally	2 0 —	— small selected, per dozen lbs.	2 6-2 9
		Turnips (English), doz. bunches	2 0-3 0
		— per bag	2 6 —
		Watercress, per doz. bunches	0 4-0 6

REMARKS.—Large supplies of English hot-house grown Grapes are arriving, but the demand for them is moderate. Plums from Kent are plentiful, and prices remain about the same as those of last week. French and Spanish Gages are much dearer, notwithstanding that the bulk of them arrive in an unsound condition. A good demand exists for large English culinary Apples. *P. L., Covent Garden Market, August 21, 1907.*

POTATOS

Kents, 3s. to 3s. 6d. per cwt.; Bedford, 50s. to 70s.; Lincolns, 50s. to 75s.; Blacklands, 45s. to 55s. per ton. Supplies are shorter and prices are firmer. *G. B., Covent Garden, August 21, 1907.*

COVENT GARDEN FLOWER MARKET.

There is now very little trade in plants. Good specimens of *Hydrangeas Hortensis* and *paniculata* are procurable. Pelargoniums are nearly over for the season, except the zonal varieties, which are still very good. Chrysanthemums are now of much better quality, and some good plants are seen. Chrysanthemum segetum and the white-flowered Marguerites are prominent subjects, also *Spirea japonica* and *S. astilboides* "Silver Sheath." Lilies, including *L. longiflorum* and *L. lancifolium rubrum*, are of the best quality. Verbenas are still abundant, also Asters in pots. Campanulas have been remarkably good this season. Dahlias in flower in 48 size pots are seen. Roses are almost over for the season. Ferns in various sizes are well supplied. *Asplenium nidus* is very good. The new *Nephrolepis Todaeoides* can be had, but the price is high. *N. Piersonii* can now be purchased at the same prices as commoner sorts. A considerable trade is done in Palms of small sizes, but most of the large ones remain unsold.

CUT FLOWERS.

Chrysanthemums are now very prominent. Lady Fitzgibbon is one of the best "whites," and if disbudded *Horace Martin* is the best "yellow." Some good bronze and pink varieties are also seen. Carnations are still plentiful, and many are purchased by the hawkers. Lilies remain at low prices; the blooms of *L. rubrum Melpomene* are of a beautiful colour. Roses are still over abundant, the variety *Mrs. J. Laing* is one of the most conspicuous. *Perle de Jardins* is the best yellow variety in the market, and *Liberty* the best red; *Kaiserin Augusta Victoria*, *The Bride* and *Frau Karl Druschki* are all good white varieties, and *Niphetos* is still extensively grown. *Gladioli Colvlei* "The Bride" is arriving from Holland in large quantities. Orchid bloom is plentiful, but the demand is poor. Hardy flowers are seen in large quantities, and many are wasted. Small growers who bring in cut flowers at this time of the year complain very much; they state that trade in bedding plants was bad, but the flower trade is worse. *A. H., Covent Garden, Wednesday, August 21, 1907.*

SCHEDULES RECEIVED.

SANDY FLOWER SHOW, to be held on Thursday, August 29. KENT, SURREY AND SUSSEX DAFFODIL AND SPRING FLOWER SOCIETY'S 3rd exhibition, to be held about the 2nd week in April, 1908, at the Great Hall, Tunbridge Wells.

LONDON DAHLIA UNION'S exhibition, to be held in the Royal Botanic Gardens, Regent's Park, on Thursday and Friday, September 12 and 13, 1907. Secretary, Mr. E. F. Hawes, Royal Botanic Gardens, Regent's Park, N.W.

NATIONAL DAHLIA SOCIETY'S exhibition, to be held at the Crystal Palace, on Thursday, September 5, 1907.

ANSWERS TO CORRESPONDENTS.

APPLES CRACKING: *L. F.* If you will forward us specimens, we will endeavour to ascertain the cause of the trouble. Bordeaux mixture is the best remedy for Pear scab at this season. Next spring drench the trees before the buds expand with a solution of sulphate of iron.

CANADIAN PAPER: *H. B.* The Canadian Horticulturist, 507 & 508, Manning Chambers, Toronto, Canada.

CLEMATIS: *J. S.* The stem and leaves do not furnish any clue to the cause of failure. There is no trace of fungi, or insects. There must be some local cause. Are you sure that the roots are growing in suitable, well-drained soil?

CLOVER IN LAWNS: *W. F.* Apply some nitrogenous manure to the lawn. This will favour the growth of the grasses, and they will in time crowd out the Clover.

CORRECTION: In the report of the Bishop's Stortford Flower Show on page 117, the winner in the Grape classes should have read Mr. J. BALFOUR, Moor Hall, Harlow, Essex (gr. Mr. A. Jefferies), and not Colonel BALFOUR.

CYCAS REVOLUTA: *H. V.* It is not unusual for this plant to develop its cones in plant houses. We have on several occasions published illustrations of the plant bearing its inflorescence in gardens in this country.

EXHIBITING CUT FLOWERS: *H. F.* *Campanula carpatica* and *C. persicifolia* are distinct species. According to the *Rules for Judging*, issued by the Royal Horticultural Society, which states that "as a general rule all variations within a genus are varieties," your exhibit of these plants as distinct varieties would be legitimate. However, to avoid dispute it would be well not to include the two *Campanulas* if you can substitute some other flower.

GRAPES: *J. C. McC.* The disease is probably the Anthracnose (*Gloeosporium ampelophagum*) but in an early stage, and no spores are formed.

LAUREL LEAVES: *A. W. K.* Your Laurel leaves exhibit just such holes as are caused by the shot-hole fungus (*Circospora circumscissa*), but there is no trace of fungus in the leaves, and no indications of insects, so that the cause of the holes cannot be determined.

LYCHNIS: *E. H.* We have examined your plants carefully and find no trace of fungi, but suspect that the cause of the mischief lies in the roots. Are you sure that it is not Eelworms? The old-fashioned plant known as *Monarda didyma*, and having brilliantly red flowers, might be given a place in the border. It is a perennial plant and grows about 2 feet high.

MELON DIAMOND JUBILEE: *Enquirer.* This variety was raised at Dropmore by Mr. Charles Hettin in 1897, and it received an Award of Merit from the Fruit and Vegetable Committee of the Royal Horticultural Society on May 26, 1897. Seeds were forwarded to Wisley for trial by Messrs. Hurst & Son, Houndsditch.

NAMES OF FRUITS: *P. J. P.* Your Grapes arrived in a smashed condition. Send others properly packed and we will endeavour to oblige you. At the same time enclose a portion of the shoot and a few leaves.

NAMES OF PLANTS: *H. T. S.* 2, *Cuscuta europæa*, the Dodder; 3, *Erica cinerea*. The caterpillar is the larva of the Death's Head Hawk-moth, *Acherontia atropos*.—*F. M.* 1, *Brassavola acaulis*; 2, *Cyrtopodium Andersonii*; 3, *Odontoglossum Lindleyanum*.—*Constant Reader.* 1, *Olearia Haastii*; 2, *Lythrum salicaria*; 3, *Anchusa italica*; 4, *Linaria vulgaris*; 5, *Piptanthus nepalensis*; 6, *Teucrium polium*.—*C. E. H.* 1, *Lastrea cristata*; 2, *L. c. uliginosa*; 3, *L. spinulosa*; 4, *Athyrium Filix-femina purpurescens*; 5, *A. f. rhaticum*.—*G. M.* (a) *Anthemis tinctoria*; (b) *Galega officinalis*; (c) not recognised; (d) *Camassia esculenta*; (e) *Physostegia virginiana*; (f) *Origanum Dictamnus*.—*J. M.* 1, *Inula grandiflora*; 2, *Sedum hispanicum*; 3, *Lastrea lepida*; 4, *Lastrea serra*.—*H. T.* *Veronica Andersonii*, purple variety. *H. P. P.* 1, *Begonia Dregei* (syn. *parvifolia*); 2, *Begonia fuchsoides*; 3, *Achillea ptarmica*, double variety; 4, *Cryptomeria japonica*.—*H. A.* *Abelia triflora*.—*Fresco.* 1, *Hypericum uralum*; 2, *Osmunda gracilis*; 3, not recognised; 4, *Liatris spicata*; 5, *Veronica longifolia subsessilis*; 6, *Polystichum aculeatum*.

PEACHES: *C. A. B.* and *G. M.* Your Peaches appear to be attacked by a black mould, which was first observed and described by Berkeley in 1864, in *Gardeners' Chronicle* for that year (p. 938) with a figure, under the name of *Helminthosporium*

rhaldiferum—found on ripe Peaches from Wales. It is very doubtful whether it has been recognised since that date. At first it was called *Macrosporium*, but the spores are not muriform, and there are very few threads. Technically it is doubtful whether it is either *Helminthosporium* or *Macrosporium*—but the

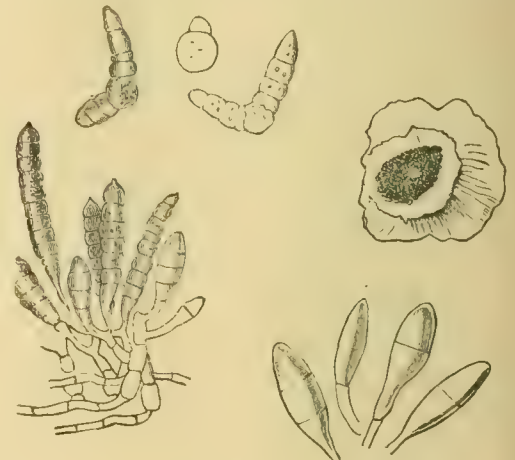


FIG. 62.—MACROSPORIUM RHALDIFERUM: A DISEASE OF PEACHES.

spores are very profuse, and, though rare, the fungus is a decided pest. Pick off and burn at once all diseased fruits, and syringe the trees with diluted Bordeaux mixture to destroy stray spores.

PLUMS: *J. McC.* Your Plums appear to be infected by Anthracnose, similar to *Gloeosporium laticolor*, which occurs on Peaches, but with smaller spores. It is probably a species not hitherto recognised. Gather and burn all the diseased fruits. For the present the parasite may be called *Gloeosporium prunorum*, the spores being 10 to 12 mm. long.

POTATO WITH AXILLARY TUBER: *J. C.* The specimen you send is not uncommon. The underground tuber of a Potato is nothing more



FIG. 63.—TUBER GROWING ON THE HAULM OF THE POTATO.

than a modified stem or shoot, and it is not surprising that these thickened shoots should sometimes be produced above ground.

ROSA RUGOSA: *G. N.* The shoots you send appear to be those of the species you are cultivating.

TOMATOES DISEASED: *H. J. G.* From your description the disease appears to be *Cladosporium fulvum*. Syringe the foliage with Bordeaux-mixture (see p. 150), afford an abundance of ventilation, and, on cold nights, circulate a little heat in the hot-water system.

COMMUNICATIONS RECEIVED.—*C. H. J.*—*H. H.*—*E. M.*—*R. A. B.*, San Remo—*J. G.*—*W. G.*—*A. W.*—*W. H.*—*S. W. T.*—*F. B.*—*W. C.*—*A. B.*—*G. C.*—*Mrs. R.*—*R. H. C.*—*J. D. G.*—*Hon. W. R.*—*G. B. M.*—*de B. C.*—*S. A.*—*W. H. C.*—*Miss S.*—*W. G.*—*F. C. R.*—*J. S.* & Sons—*W. W. Naunton* (with thanks)—*A. W. Hill*—*E. T. M.*—*Dr. R.*—*T. R.* & Son.

THE

Gardeners' Chronicle

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THE COUNTRY GARDEN.

THE country garden that has for one of its main features the flowering trees and shrubs is generally a beautiful garden. It may be large and rambling, or it may be of but medium size, but there is, as a rule, something in its setting—that is to say, its surroundings—that seems especially to accompany a generous supply of flowering trees and shrubs.

A well-grown shrub in full blossom is, in many cases, a means of getting a mass of colour in a particular spot that would not otherwise get the brightening effect of colour, as it does not contain either bed or border. This, I cannot help thinking, is highly important and a point no good gardener with an eye to decorative effect can afford to overlook. Another consideration lies in the fact that by this means we can secure considerable masses of colour at different elevations, and when colour can be secured above the level of the eye it has a distinct and appreciable value for distant decorative effect.

This makes me say that a tall, flowering

tree, or shrub, at the far end of a long vista has more value than the same amount of blossom would have laid down in a flat bed or border. And if, at the same time, some of the more uncommon flowering shrubs are made use of, then much additional interest is added to the garden.

There is just one other point I want to notice before I go on to name a few desirable varieties, and that is, that where space suffices for a good number, it is well to secure a selection that will flower over a long period. Those favourite flowering trees the Lilacs, Guelder Roses, Philadelphus, white or red Thorn, and Laburnum unfortunately flower more or less simultaneously, and, as these are the trees and shrubs that are planted most largely, and often to the neglect of all other species, it follows that, though brilliant for a short season, the flowering of trees and shrubs cannot be reckoned on as an effective factor in the beauty of such gardens except in the early summer. We ought to seek to remedy this, to discover varieties of both trees and shrubs that carry the flowering season much farther into the year, both earlier and later.

White is far more usual as the colour of the blossom of trees and shrubs—and after that, I suppose yellow—than brighter and fuller colours.

A beautiful, even a striking subject for a sheltered position is Magnolia stellata. Comparatively dwarf in growth, its glistening white blossoms are opened in March, and, from their curious narrowness, the petals have a strap-like effect. For beauty there is scarcely another shrub to compare with this, and I mentioned "a sheltered position" not at all by reason of any tenderness of the shrub, but merely because in a wind-swept spot the pure white flowers may be bruised and partly ruined. Earlier still to flower is the valuable Forsythia. I cannot help thinking that the species *F. suspensa* has too greatly taken the place of *F. viridissima*. We use the former as a wall subject, and seem to forget that *F. viridissima* makes a capital early flowering shrub for an open position.

Instinctively, almost, we regard the country garden as, at the same time, the old-fashioned garden, and, therefore, it seems to me that any shrub that especially can be looked upon as old-fashioned is peculiarly suitable. Among these must be named the brilliant, orange-flowered single and double Kerria, and it may be added that the flowering period of the double form is twice as long as that of the type. This Kerra is in flower with the Forget-me-nots, and a great mass of the blue flowers of Forget-me-nots under the flower-laden, orange-coloured shrub is as effective in spring as anything could be.

For July and August flowering—the months, by the way, when flowering shrubs are particularly an addition to the garden—there is *Olearia Haastii*. It is evergreen and worthy of really good cultivation. A shrub 5 or 6 feet high, under happy conditions, it should be, by the beginning of August, a dense mass of white flowers, and those who delight in seeing the bees at work in their gardens will find an additional charm in this shrub, as the bees love it.

Another good old-fashioned subject is

Hibiscus syriacus, known in former times as *Althea frutex*. There is a double form with pink flowers much to be recommended. The shrub shows, however, a diversity of colouring, its range being from pure white, as *H. Jeanne d'Arc*, to deep dark red, as in the variety *Boule de Feu*. When I first purchased *H. syriacus* I was told to plant it in a dry, warm spot; that, however, is the greatest mistake. To flourish as it should, the soil should be deep, rich, and moist.

I always look upon *Colutea arborescens* as a valuable addition to the summer-flowering shrubs. Practically, it will grow anywhere, and it is decorative for a long period, first with its blossom, and later with its inflated seed vessels. Its delicate lightness makes it charming among evergreens. Its introduction into England dates back to the 16th century, so that it ranks easily among the old-fashioned shrubs, and, like so many shrubs that have that distinguishing subtitle "arborescens," there is a dignity about it that is impressive. The Allspice or Calycanthus is not striking, but it is soberly and quaintly pretty, and uncommon, both in the deep rich colouring and in the form of the flowers. The plant is of compact habit and neat in growth, flowering from mid-July.

Practical Gardener.

NEW OR NOTEWORTHY PLANTS.

BULBOPHYLLUM BINNENDIJKII,
J. J. SMITH.

At the Temple Show this year Messrs. Sander & Sons showed in their group of Orchids a very striking plant under the name of *Bulbophyllum Ericssonii*. On seeing it I was at once impressed by its differing greatly from the type plant of *B. Ericssonii*, which flowers freely at Tring Park every year, and which was illustrated in the *Gardeners' Chronicle*, January 23, 1897, p. 61. The most obvious difference was the rigid, upright position of the odd or dorsal sepal, the larger, purple spots on this and the remaining segments, and the darker colour of the lip. On an examination of the distinguishing characters of the species of this section of *Bulbophyllum*, viz., *B. Ericssonii*, *B. virescens*, *B. Pahudi*, *B. galbinum* (illustrated in the *Gardeners' Chronicle*, July 20, 1907, from the Tring Park specimen), and *B. uniflorum* = *B. Reinwardtii*, I found that Messrs. Sanders' plant is *Bulbophyllum Binnendijkii*, J. J. Smith = *Cirrhopetalum leopardinum* T. and B.

In addition to the above-named species of this group, there are at least two forms grown in English gardens under the name of *Bulbophyllum virescens*, which most likely are unnamed species, but I shall have a further communication on this highly interesting section to make later on, when the status and synonymy of the species, and also the question of the two genera *Cirrhopetalum* and *Bulbophyllum*, will be thoroughly discussed. *Walter Rothschild.*

ZALUZIANSKIA MARITIMA.

THIS pretty little plant was raised from seed sent to me by my esteemed correspondent, Mr. G. Thorncroft, of Barberton, Transvaal. The name sent with the seed of *Zaluzianskia* was evidently incomplete, but on its blooming and being sent to the Herbarium at Kew for identification I was told that its correct name was *Z. maritima*. I was also referred to plate 2,504 of the 51st volume of the *Botanical Magazine*, where it is figured under the name *Erinus Lychnidea*, or the Phlox-like *Erinus*. The portrait of the flower there given agrees with

my plant in every detail except the colouring of the exterior of the petals, which in the plate are depicted purple, almost black, whereas in my flowers these are a deep shade of red. The interior of the bloom is pure white, and when the flowers open quite flat at about sunset they present a very pretty appearance. They remain closed throughout the day. *W. E. Gumbleton.*

ORCHID NOTES AND GLEANINGS.

ARPOPHYLLUM GIGANTEUM.

IN a paragraph published in the issue of *Gardeners' Chronicle* for June 15 last, p. 378, on *Arpophyllum giganteum*, the habitat was given as Mexico and Guatemala. Looking up *Index Kewensis*, I find it also given there as Mexico. But Mr. G. Lyme, when curator of Castleton Gardens, 1879-85, found *A. spicatum* indigenous to Jamaica, and specimens were collected for the Jamaica Herbarium. The West Indian habitat should be, therefore, added to the records for *Arpophyllum*. *J. H. Hart, F.L.S., Botanical Dept., Trinidad.*

CYPRIPEDIUM PARISHII.

A NUMBER of strong specimens of this distinct *Cypripedium* have been flowering in the collection of A. J. HOLLINGTON, Esq., Forty Hill, Enfield (gr. Mr. Ayling). Several at present in bloom have from six to eight flowers on a spike, and all are expanded at the same time. It is a native of Moulmein, and its broad, green leaves make it an attractive plant even when not in bloom. The flower-spikes are some 15 inches in height, and bear from three to eight flowers each. The sepals are yellowish-green, and the drooping, twisted petals, which are about 5 inches in length, are tinged with purple and bear on the margins hairy, wart-like protuberances. The lip is green, stained with purple. Although not one of the showiest *Cypripediums*, it is highly attractive. This species is often said to be shy-flowering, but Mr. Ayling, with whom it flowers well every year, considers that the fact that it is generally kept in too warm and close an atmosphere accounts for its failure to flower in many cases. At Forty Hill, C. Parishii, C. Rothschildianum, and others of the section, are grown as intermediate-house plants, and all produce their flowers in great profusion. The leaves are shorter and of thicker substance than on plants grown in warmer houses. *J. O'B.*

ODONTIODAS.

By an unexplainable inadvertence in my article on *Odontiodas*, published on page 142 in last week's issue, I omitted to include in the table, the record of one of the most important plants of the family, thus—*Odontioda Bradshawii* (C. Noezliana \times Od. crispum), Charlesworth, R.H.S., January 8, 1907, F.C.C. The plant itself was prominently mentioned in the text, but that was not in itself any reason for its non-inclusion in the proper place in the table. *de B. Crawshaw.*

Accuracy is a matter of the highest importance, and I regret that in the transcription of a hasty note anything should have appeared that rendered necessary the correction made by Mr. Crawshaw at page 143 of your last issue. Mr. Crawshaw writes: "At that time I had plants of three *Odontoglossums* crossed with C. Noezliana, hence it was unlikely I should have stated it could not be effected." But the curious thing is that he did not state this at the time, when we discussed this very matter, and when capsules and seedlings from the reverse cross were pointed out. The second note "did not fully solve the question," because Mr. Crawshaw declined to allow the crosses he had made, to be published, and gave reasons for doing so, but as he has now published them the matter is set at rest. Let us hope these will be successful. Too many have not been

so, as Mr. Crawshaw himself points out. Finally, is it quite certain that *Cochlioda Noezliana* was the "male or pollen parent" of *Odontioda Vuylstekeae*, as Mr. Crawshaw states? M. Vuylsteke was himself uncertain, for "the cross was made both ways, and at first it was feared that the seeds had failed to germinate." See *Orchid Review*, Vol. xii., page 190. The information came from M. Vuylsteke. Can any one report seedlings from *Odontoglossum nobile* (Pescatorei) as the mother? The cross must surely have been frequently made during the last three years, and the reverse cross has succeeded in several places. *R. A. Rolfe.*

TREES AND SHRUBS.

ESCALLONIA PTEROCLADON.

THIS species, which is one of the most hardy and showy of the genus, is at present flower-

hardy. *Escallonia pterocladon* is easily propagated from seeds which ripen freely on the plants in the autumn. *W. Smith, Royal Botanic Gardens, Edinburgh.*

NERIUM OLEANDER.

THIS beautiful evergreen shrub, of which there are several varieties, both single and double-flowered, should be more commonly grown than it is. It is especially suited for the decoration of a verandah and for standing in tubs and pots grouped in sunny spots in the garden. When grown in the shade, the wood rarely becomes ripened, and bloom is then rare. If placed on the turf it is better to sink the receptacle in which it is grown. Cuttings of ripened wood taken at this season root readily, and if they are potted when rooted and kept in a greenhouse during the winter, planted out-of-doors the next year, and freely syringed in dry weather they will make good plants in two years. Some



FIG. 64.—ZALUZIANSKIA MARITIMA: FLOWERS DEEP RED AND WHITE.
(Longitudinal section of flower and mouth of tube $\times 2$, pollen grains $\times 300$.)

ing profusely in these gardens. The specimen is planted at the foot of a south wall, and has reached to a height of over 10 feet, and so freely are the inflorescences produced that the whole plant appears wreathed in its white flowers. These individually are very small, and the earliest appeared at the beginning of July on the current year's shoots either singly or in threes, in the axils of the small myrtle-like leaves. They are white, slightly tinged with pink, and they are slightly fragrant. The small lanceolate-shaped leaves at the base of the flowering shoots are about 2 inches in length, but they gradually merge into minute bracts towards the apex. The species is a native of Western Patagonia, and is commonly known as the winged-branched *Escallonia* on account of its angular stems, but the wings are present on the younger shoots only, as the older ones shed their bark. This plant will flower freely in the open when trained in bush form, for it is quite

stopping of the shoots is necessary, so as to promote a bushy habit. *F. M.*

THE SPRUCE GALL MITE.

A CURIOUS fact in connection with this pest is that it is very slow to go from tree to tree, even when the trees are in close proximity to each other. For the past nine years I have had under observation four young trees planted in line, and not more than 5 feet apart from each other. When I first noticed them they had been recently planted, and were all of nearly equal size. Now, the largest tree, which has never shown any signs of affection, though its branches are mixed up with those on either side of it, is about 11 feet high; the best of the others is only 5 feet, and the worst, which is almost covered with the galls, is not more than 3 feet high, though it is still alive, and makes an annual attempt to grow. Is there any explanation as to the immunity of the one tree? *J. C. Tallack.*

KEW NOTES.

THE GREENHOUSE.

VARIOUS species and varieties of Begonias form a prominent feature in this house at the present time. Large specimens of *B. echinosepala* in 12-inch and 14-inch pots are 6 feet in height and well furnished with flowers and foliage. In general appearance the plants resemble the well-known *B. metallica*. The red-flowered *B. coccinea* gives promise of continuing to flower for some time to come. It is trained up one end of the house, and is also growing in pots. Large plants of the hybrid *B. President Carnot* are carrying large racemes of rosy-carmine flowers. The pendulous trusses of rich, scarlet flowers of *B. coccinea* have a stately yet graceful habit quite distinct from the surrounding plants. Both growing in pots and as a plant for hanging-baskets, *B. Knowsleyana* is valuable with its clusters of pinkish-white flowers. A group of the dwarf-growing *B. Weltoniensis* is prominent on one of the side stages. *B. Dregei* (white) is an excellent cool

help to add variety to the house. Abutilons, Fuchsias, and Zonal Pelargoniums are all grown in this manner. Amongst the Pelargoniums, the variety *Mikado* is especially good. A large specimen of *Datura* (syn. *Brugmansia*) *Knightii* is very handsome with large, pendulous, double-white flowers. The blooms are delightfully fragrant, and perfume the air all around, so strong is the scent. A number of plants of *Lilium sulphureum*, planted out in the beds, are opening the first flowers. One in particular is very vigorous, being 11 feet in height with 10 flowers. Large specimens of *Crinum Powellii* var. *album* are conspicuous with pearly-white flowers. Several plants of *Eucomis punctata* are carrying a number of racemes thickly clothed with greenish flowers.

Plants arranged on side stages.—The usual arrangement here is to have a group of one, or sometimes two, species or varieties mixed. In this way the character and beauty of the plant is better seen than when all the plants are mixed together. The erect-growing *Clerodendron fallax* is represented by a group of seedling plants about one year old.

in whorls. Plants may be raised annually from seeds, or propagated by division. Other plants in flower are *Scutellaria Mociniana*, having scarlet flowers tipped with golden-yellow; *Cuphea micropetala*, a shrubby species in which the scarlet calyx, yellowish at the apex, is more prominent than the petals; *Sollya parviflora* (syn. *S. Drummondii*), *Impatiens Holstii*, &c.

Climbers.—These are valuable in a greenhouse and conservatory, especially in large structures, to clothe bare pillars and relieve the appearance of the roof. The following plants are at present in flower. The climbing *Dahlia Hidalgo Wercklei*, *Lantana salvifolia* (syn. *S. delicatissima*) seems to be always in flower, *Ipomæa rubro-cœrulea*, *Lapageria rosea*, *Passiflora cœrulea* and var. *alba*, *Rhodochiton volubile* [hundreds of flowers hanging in festoons from the roof], *Fuchsia simplicicaulis*, and several garden varieties. The foregoing, and a number of plants in baskets, add greatly to the beauty of the house. Growing in baskets are *Alonsoa incisa*, *Clianthus Dampieri* and the variety *tricolor*, *Campanula isophylla*, *Achimenes*, *Fuchsias*, and several species of *Asparagus*. *D. D.*

JUNIPERUS CHINENSIS AT ROOD ASHTON.

FIG. 65 affords a view of a remarkable tree of *Juniperus chinensis* with a globose habit, growing in the gardens at Rood Ashton, Wiltshire. The tree is about 25 feet in height, and the spread of its branches measures 30 feet. The date of its planting is not known with certainty, but the tree is considered to be about 80 years old. The specimen occupies an exposed position at the extreme boundary of the lawns facing to the south-east. Several other well-developed trees are found on the lawns, not the least conspicuous being some fine specimens of *Cedrus atlantica*. The soil in this portion of the estate is of an extremely fertile nature, being a very deep sandy loam overlying a rock formation.

The Juniper under notice presents quite a varied tone of colour at different periods of the year. In the earlier years of its existence it appears to have been shaded by other trees, so that the lower branches have been lost. The stem near to the ground has a girth of more than 4 feet. Though the tree is of fairly well-balanced proportions, it appears to lack a "leading" shoot, and this has probably largely accounted for its breadth being greater than its height. The peculiar contour of this Juniper engages the attention of visitors. *W. Strugnell, Rood Ashton Gardens, Wiltshire.*

THE ALPINE GARDEN.

HYPERICUM REPTANS.

It is surprising that no reference is made to this very beautiful species of *Hypericum* in the gardening books, including Nicholson's *Dictionary of Gardening*, as the species is among the prettiest and best of the smaller St. John's Worts for the rock garden. Its habit is prostrate, and it forms a trailing carpet of greenery that is spangled here and there with the clear yellow flowers, each of which is about an inch across. It does not succeed in a very dry place in summer, and the soil about it should not be too moist in winter. In a position that is fully exposed, the plant may suffer from cold in a hard winter. My experience is that it thrives much better in partial shade, in a position such as is afforded on the north or north-east side of a rockery, provided some shelter is available to protect it from cold winds. Although this species is removed with difficulty after it becomes established, I have succeeded in shifting large plants by giving them a good soaking with water, pressing the soil about the roots and removing them at once to their new quarters. *Hypericum reptans* is a native of the Himalayas. The stock may be increased either by means of cuttings or seeds. *S. Arnott, Dumfries.*



FIG. 65.—JUNIPERUS CHINENSIS AT ROOD ASHTON, TROWBRIDGE.

greenhouse Begonia. A hybrid which is useful for the greenhouse and also for bedding is *B. Corbeille de Feu*, with red flowers. It is a hybrid between *B. semperflorens* and *B. fuchsoides*. The plants of *B. nitida alba* average 3 feet in height, with numerous panicles of white flowers, well set off by the large, shining green leaves. Perhaps the best species to grow as a basket-plant is *B. glaucophylla*. The stems are naturally drooping, and the flowers are of rose-red colour. The yellow-flowered species *B. Davisii* is also in flower.

Tall-growing plants.—The following are some of the showiest and most interesting plants arranged in the centre beds of the house. With the exception of one plant of *Impatiens Oliveri*, the whole of the central bed is filled with the Chimney *Campanula* (*C. pyramidalis*), principally the blue variety mixed with double Tuberoses. *Calceolaria Burbidgei* is represented by well-flowered plants 6 feet in height. Yellow, such as is seen in the flowers of this *Calceolaria*, is always a pleasing colour in the greenhouse. Various plants grown as standards

The panicles of bright scarlet flowers, rising here and there amongst the white flowers of *Campanula Vidalii*, are displayed to perfection. The latter plant is very distinct and chaste in appearance. Treated as a biennial, this is a valuable plant for the cool greenhouse and conservatory, also for the flower beds or borders in August. During winter the plants can be grown in a cold frame, if protected from severe frosts by a covering of mats. The willow-leaved *Angelonia*, *A. salicariæfolia* (syn. *grandiflora*) is a pretty, blue-flowered greenhouse perennial. It may also be treated as an annual. The white variety *alba* is also here in flower. A plant little known in gardens is *Dianthera nodosa*. It requires warm greenhouse treatment, but, when in flower, may be moved to a cooler house. The pale, purplish flowers are freely produced from the axils of the leaves. Although really a hardy plant, the pretty little *Primula Forbesii* does better treated as a cool greenhouse plant. When a number of plants are grown together in shallow pans the effect is very pleasing. The pale, lilac-coloured flowers are freely produced

THE ROSARY.

CULTURAL NOTES FOR SEPTEMBER.

ALL budding, except on the *De la Grifferaie* stock, should now be finished. This stock is actively in growth much later in the season than others, and for that reason free-growing varieties of Tea and Noisette varieties of Roses can be inserted with every chance of success up to and not later than the middle of September.

Grafted Roses and those on their own roots that were plunged out-of-doors will, providing their shoots have been judiciously stopped, be showing plenty of flower-buds. A succession of blooms can be maintained from these plants till late autumn, provided that at the end of the month a portion of the batch is covered temporarily with movable glass frames, but not at the sides or the ends. The buds after September is passed will open better, and the petals will be cleaner if this glass protection be afforded. Most of the Tea and China Roses are now more pleasing and brilliant than at any other time. Shoots that have started into growth on the early-budded plants can now be shortened back to within three or four eyes.

A portion of the stock of forced Roses in pots, that have been plunged outside since the spring, can now be potted or top-dressed according to the condition of the roots. Those that were re-potted last year will generally require to be top-dressed only, and have the drainage corrected. Take out to the depth of 2 or 3 inches the old surface soil and replace it with some good loam. If the pots are filled with roots, place the plant into a larger receptacle, but if they have made little or no new roots return them to pots of the same size, using clean pots and fresh soil. In all cases pot firmly, and use a blunt stick for ramming when potting in 6 and 7-inch pots. An early batch of plants can be put in hand during the month, but the bulk of the potting should remain until well into October. When, as is usual, turfy loam or turves have been stacked for several months with layers of manure between them, little more will be required than the addition of some sharp sand or grit, and, for Tea and Noisette varieties, a small quantity of leaf-mould. If these materials are not available, the best use must be made of all those that can be obtained, but loam must be had in some form, and if new, it should have incorporated with it some rotten manure and road grit. It will be necessary to expose these materials to the air for at least a month before potting is commenced at the end of September.

Roses planted out under glass and intended for early flowering should be given a thorough soaking of water at their roots, and have their branches cleaned with a good insecticide that must be well sprayed on to the shoots by means of a garden engine or syringe. Allow a maximum amount of ventilation in the structure both by night and by day.

THE PLANTING OF ROSES.

It will soon be time to consider the planting of Rose trees. If a nursery can be visited, it is a valuable guide in selecting newer varieties and the best of the older kinds, and advice can be solicited on points such as the best varieties for town planting, or for special soils. The smoke-laden atmosphere near towns with smuts and soot stop up the pores of the leaves: plants near towns are also the more susceptible to the attacks of green fly and mildew. The best remedy in these conditions is to daily cleanse the foliage with a solution of soft soap applied with the garden syringe, or tobacco and quassia extract in hot water: for mildew add 3 ounces to 1 gallon of "sulphurivum," well stir and apply to both sides of the foliage, but wash off the fungicide later with clean water. An application twice a week will generally suffice to cleanse the plants,

but if very badly infested the application should be repeated oftener and at an increased strength. The soil near towns soon loses its good qualities, and for this reason requires to be frequently renewed. The old soil should be occasionally cleared out and fresh maiden-loam and manure substituted.

Climbers and bush varieties of Roses thrive the best near towns. Standards are as a rule very short-lived.

VARIETIES FOR URBAN DISTRICTS.

For town planting a selection of clean, healthy plants should be obtained from the country in October. Some varieties and classes of Roses succeed better than others near towns, notably the evergreen climbing and pillar Roses, which are all suitable for furnishing walls, arches, &c. Next in value are the hybrid China, hybrid Bourbon, the old Provence Cabbage, the old pink, white, and crested Moss, and many of the more hardy and freer-flowering hybrid perpetual varieties. The above selection



FIG. 66.—ARISTEA (WITSENIA) CORYMBOSA
FLOWERING IN THE OPEN IN DEVON.

will also be found to suit smoky districts. Some of the kinds I have mentioned are rather scarce, being out of date and difficult to procure. I recollect a collection of them growing in my father's nursery many years ago; some were trained as festoons on pillars and arches, and others as dwarf, ground plants, and for wealth of colour and abundance of bloom they were then without rivals. Amongst the best of the hybrid China and Bourbon Roses are *Blairii* No. 2, *Coupe de Hebé*, *Chas. Lawson*, *Paul Ricaut*, *Chénédoie*, *Mme. Plantier*, *Sir Joseph Paxton*, and *Eugène de Beauharnais*. The list of hybrid perpetuals includes *Duke of Edinburgh*, *Mrs. J. Laing*, *General Jacqueminot*, *Boule de Nègre*, *John Hopper*, *Anna Alexiff* and *Ulrich Brunner*. Lastly, although in order of precedence they should have been named first, are the varieties of climbing and pillar Roses *Amadis*, *Thoresbyana*, *Dundee Rambler*, *Fellernberg*, *Félicité-Perpetué*, *Mme. d'Arblay*, *Queen of Belgians*, *Aimée Vibert*, and *Williams' Evergreen*. J.D.G.

WITSENIA CORYMBOSA IN THE OPEN.

THIS pretty plant, which has an affinity to the Iris, was introduced into this country from South Africa rather more than a hundred years ago. At the time when New Holland, hard-wooded plants were largely grown, this Cape species was fairly common in greenhouses, but at the present day is extremely rare in cultivation, being almost unprocurable in the trade. Under glass, in the old days, it generally flowered late in the autumn, its gentian-blue coloured flowers making a pretty contrast to the Chrysanthemums then in bloom. The species is very distinct in habit, the stem being erect and of a firm, woody texture, while the sword-shaped leaves are arranged in a fan-like manner at the ends of the branches. The branching racemes of star-like, deep-blue flowers, almost an inch across, protrude beyond the tips of the leaves, and are freely borne. This *Witsenia* is now considered to be an *Aristea*, but it is far superior to *A. Eckloni*, which is also grown in the open in this garden, its flowers being much larger and remaining open the whole day, whereas those of this *Aristea* close at about two o'clock. Having seen specimens in the open in two gardens in the south-west, which were, however, not in the best of health, I determined to try it out-of-doors, and, after much trouble, procured a plant. This has now been in the open for two years, in front of a south wall, and, protected by a few evergreen branches, came through the past severe winter unharmed. It is now rather more than 2 feet in height, and very healthy. Curiously enough, this plant flowers in the open in the month of August, whereas in greenhouses it is generally in bloom in November. It is growing in sandy peat, and appreciates ample moisture during the summer months. The plant is a slow grower. It may be propagated by removing the leaf-fans at the base of the stem, each with a little of the old wood adhering to it, and placing these around the edge of a pot in very sandy peat, surfacing the soil with a layer of sand, and watering well. The cuttings must, as soon as potted, be covered with a bell-glass and be kept close until rooted, when a little heat will induce quicker growth. S. W. Fitzherbert, South Devon.

TRENCHING.

THE importance of the proper preparation of land before any plants are placed in it cannot be over-estimated, for upon the thoroughness with which this work is performed will largely depend the future well-being of the plants. The cost of properly digging and preparing an acre of ground is certainly a considerable item in a new garden, but if the latter is expected to furnish the best results, this initial expense must be incurred. The actual cost of trenching an acre of land varies according to the nature of the soil and the sub-soil, but to break this area of ground to a depth of from 2½ feet to 3 feet may be roughly estimated at from £20 to £35. If manure is incorporated, the cost will be considerably higher, say from £10 to £20 an acre more, according to the nearness and cheapness with which the dung can be obtained.

In commencing to trench a piece of ground, a line should first be stretched down the centre to divide it into two equal parts. A shallow furrow should be next made along the line with a spade. The first trench, to a width of 3 feet, should then be made on one half of the ground to be trenched, and the soil excavated be wheeled on to the corresponding part of the other half. The last trench on the first half is filled by the soil from the first opening on the other half, and so on until the last trench of all is filled by the soil wheeled out at the commencement. If the ground is of such a shape that it is not possible to divide it into two comparatively

equal parts, then the soil from the first trench must be taken to the opposite end to fill up the last trench, and in this case a cart will be found useful, as there are many cartloads of soil in a seemingly short trench.

The depth to which the ground should be broken depends entirely upon the nature of the sub-soil, but a depth of $2\frac{1}{2}$ feet should be the minimum. As a rule, 3 feet will not be too deep. It is unwise, however, to bring up too much inert soil to the surface, and if it is of such a nature that it is not advisable to bring it to the top, it should be thoroughly broken with a fork as deeply as is possible. The top spit of most soil is usually fairly suitable for plant-life, for though it may be greasy or choked

as much as possible, and, after the loose soil has been shovelled out of the bottom of the trench, the ground beneath should be broken as deeply as possible with a fork. If the ground is waterlogged, though not sufficiently so as to render draining necessary, it is advisable to place a layer of 6 inches or more of long straw from the stable yard, heather, bracken, or something of a like nature in the bottom of the trench. These substances will act for a year or two as a kind of drainage material, and by the time they have become rotten the broken ground above will be sufficiently weathered and porous to admit of a free evaporation of moisture. In the case of light, gravelly soils there are often too many stones present. When such is the

Freshly-trenched ground should be allowed a certain time to settle—preferably a year—before being permanently planted, but that need not prevent it producing a temporary crop. Potatoes form one of the best first crops on trenched ground, as they are not affected by the gradual sinking of the soil to its proper level, and chiefly because the operations of hoeing, earthing-up, and final digging of the tubers keep the ground stirred and cause it to become sweetened. Oats, Rye, Mangolds, and Turnips can also be used, but Potatoes are to be preferred, for the reasons stated above, while they also succeed particularly well on fresh ground.

Trenching should be contracted for by piece-work. Measurements vary in different districts; in some localities all ground work is done by the square of 10 yards, and in others by the square rod of $5\frac{1}{2}$ yards. The latter system prevails in this locality, and the cost of the work varies from 2s. 6d. to 4s. 9d. per rod, the latter for gravelly ground and including screening. If it is not possible to see every trench properly turned over, an iron bar about half an inch in diameter should be used for testing each trench. The depth at which the digging was agreed upon should be marked on the rod, and if it cannot be pushed down to that depth fairly easy, it shows that the work has not been thoroughly done. *J. Clark, Bagshot, Surrey.*

MATRICARIA INODORA "BRIDAL ROBE."

This improved variety of the native scentless Matricary received an Award of Merit from the Floral Committee of the Royal Horticultural Society, on August 6 last, when it was shown by Messrs. Titt and Son, Windsor. The variety should prove an acquisition amongst hardy garden subjects, for the type plant is one of the freest flowering "weeds," and is found in flower almost all through the season, from spring to autumn. The flowers of the variety "Bridal Robe" are white, and have the appearance of white blooms of *Pyrethrum roseum*. Each flower measures $2\frac{1}{4}$ inches in diameter.

FRUIT REGISTER.

SOME LATE-RIPENING PEACHES.

THE Peach crops in 1905-6 were, in many parts of the country, very unsatisfactory, but this season the results have compensated for those two bad years, as the crop is an excellent one in every respect. The following remarks refer to the outdoor crops of this fruit. Even in parts of the south-west, and in other favoured localities, the soil is not, in every district, suitable for the Peach, and in such instances I would advise the use of Peach cases or unheated houses. I have seen in some gardens in the south of England Peach trees so badly blistered that the trees on open walls never gave any return! The soil was an almost pure clay, and it was always waterlogged, but if the trees had been grown in unheated houses, splendid results would have followed. The glass structure is not only valuable for the Peaches, but it can be used for six months in the year to protect other crops. Many years ago I had a house of this description under my charge in the Midland counties, and it was one of the most useful structures in the garden. By its aid we were enabled to grow winter salads, and the house was equally useful for protecting many tender plants in the early spring.

Varieties of Peaches suitable for culture in unheated houses are by no means limited in number. Recently I saw the new variety *Peregrine* planted in a cool house, and though the fruits were not ripe, as it is a midsummer variety, I was impressed with its value for cool-house culture. Another lesser known but admirable kind for culture under glass is *Thomas Rivers*. The fruits ripen late in September, and it is one of the most valuable of all Peaches. The fruits are large, solid, and of excellent flavour. *Belle Beaux* is a variety that is not so well known as its merits deserve. A tree trained on a back wall in a cool house was one of the most profitable items in a garden once under my charge, as it never failed to produce a heavy crop of large



FIG. 67.—MATRICARIA INODORA "BRIDAL ROBE": FLOWERS WHITE.

with weeds, it has been more or less exposed to the beneficial influences of sun, rain, and frost. Should it be desired to retain this top-spit at the surface, it should be thrown on to the top of the preceding one. By turning it upside down, and shovelling any fine loose soil from the trench on to the top of it, the weeds, &c., will be buried to a depth of about 1 foot, sufficiently deep to destroy them. These remarks do not apply to couch, or twitch grass, which should be forked out and burned, although it may be killed if buried 3 feet deep. Having disposed of the surface soil, the next question is to deal with the ground beneath it, and the handling of this will depend upon its composition. If it is heavy, clayey ground, it should simply be turned over and broken up

case, the best plan is to use a coarse screen, and to separate the largest of the gravel, which can always be sold at a fair price if it is not needed in the garden. Care must be taken not to remove all the stones, as a certain proportion of these will help to keep the soil porous, and they will also assist in conserving moisture in the ground in dry weather.

If manure is to be worked in when trenching, it is advisable to put a fairly thick layer of it under the top-spit, so that it will be about one foot below the surface. For certain plants, especially Roses, it is advisable to work in another layer at a depth of about 2 feet, but for general purposes the upper layer will be sufficient, as more manure can be added later near the surface.

and good fruits. Exquisite, though a yellow-fleshed variety, is a splendid late September Peach; another variety not unlike it and excellent for cool-house culture is Thames Bank. This Peach is now rarely seen, but it is one of the best, and produces fruits of large size and good flavour. Of kinds better known may be mentioned French Galande, a splendid melting, richly-flavoured fruit, in season in September. It is often known as Bellegarde or Noir de Montreuil. Royal George may be considered one of the best varieties, and to the list may be added Dymond, Crimson Galande, and Lady Palmerston: the last-named variety has fruits of large size and with pale yellow flesh.

To obtain the best results in the open, the soil must be rich in quality and suitably drained. The Peach will succeed in gravelly soils, but in hot, dry situations on the gravel the foliage quickly becomes infested with red spider. The most suitable rooting medium is a good, rich loam. The old fruiting wood should be removed after the fruits are harvested, for this enables the trees the better to mature next season's fruiting wood. The trees should never be crowded with shoots, and, if possible, the manner of training should follow the extension principle, by which system the trees will furnish a wide area of wall space in a few years.

One of my favourite late Peaches for outside wall culture is Sea Eagle, a seedling from Early Silver, having a rich, vinous flavour. The fruits ripen at the end of September, and they are of very large size and highly coloured. The Nectarine Peach is also a late September variety. This is one of the best late-fruiting kinds, having a smooth Nectarine-like skin. The flesh is rich and melting, and though I found this variety to be a little less prolific in fruiting than Sea Eagle, it is an excellent Peach when grown in a well-drained or warm soil. Gladstone should also be given a trial, being a large, late-ripening Peach. Thomas Rivers, that was advised for glass culture, does well on a south-west wall, and it is especially suitable for culture in the southern counties. The well-known variety Royal George is a little earlier in ripening than most of those I have described as suitable for open walls: its free-bearing qualities and habit of growth makes it a favourite for any position. Much the same remarks apply to Stirling Castle and the large fruiting but excellent variety Noblesse. These are all suitable for the hardy fruit garden. *G. Wythes.*

APPLE MILDEW.

In the college plantations here the Apple Mildew (*Podosphaera leucotricha* [Ellis & Everh.] Salm.*) has lately begun to attack the fruit. In some cases the delicate, white spawn (mycelium) of this mildew has spread over the greater part of the Apple, covering it with a very fine, thin, whitish layer, looking somewhat like "bloom." In other cases the Apple is attacked on one side only (usually the side nearest to the leaves), or frequently only in the immediate neighbourhood of the stalk. No deformity, or, indeed, injury, has up to the present been observed in the affected Apples, although, where the mildew has almost completely enveloped the Apple, it is probable that the ripening will be interfered with. In the present case it appears that the mildew has only lately appeared on the Apples, having spread from the leaves to the fruit when the latter was full grown. In all the cases observed the leaves also of the tree were affected with mildew. The varieties which I have found with mildewed Apples are the following:—Irish Peach, Lane's Prince Albert, and Sandringham.

On carefully inspecting mildewed Apples of the varieties Irish Peach and Sandringham, I

found, in a number of cases, the ripe fruit-conceptacles (perithecia) of the fungus. These conceptacles, containing the winter-spores (ascospores), occurred in scattered groups on the mycelium on the surface of the Apple. In many cases the parasitic fungus *Ampelomyces quisqualis* had attacked the mildew, and formed its own fructifications on the Apple by the side of the perithecia of the *Podosphaera*. It may be noted that *Ampelomyces* during the present season has been remarkably prevalent on Apple leaves attacked by the mildew.

I should be glad to learn from growers if the fruit of Apples is being attacked generally by the mildew. Mr. F. Smith, of Loddington, near Maidstone, tells me that, some years ago, he noticed the mildew on the fruit of some of his Apples, but has not observed it since. It is possible that it is only in such damp summers as the present that the mildew is able to spread from the leaves on to the fruit. It is of some interest to ascertain what varieties are liable to be attacked as regards their fruit, and I should be glad to receive examples of mildewed Apples of other varieties than those named above for examination and experimental purposes. *E. S. Salmon, F.L.S., Mycologist to the South-Eastern Agricultural College, Wye, Kent.*

The Week's Work.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq., Norwood, Alloa, Clackmannanshire.

Grape vines.—The varieties Lady Downes, Lady Hutte, Directeur Tisserand, Gros Guillaume, Black Alicante, &c., being well advanced in colouring, if not already coloured, will require a free circulation of air in the structures both by day and night. Maintain a little heat in the water pipes almost continually to expel the atmospheric moisture in the houses, and particularly during cold, wet weather. Cover the outside borders with frame sashes to protect them from rains. Varieties not colouring satisfactorily should be kept as dry as possible at the roots, and be prevented, if possible, from making a second growth. Rub out any young growths as soon as they appear. Test the borders regularly with the soil tester, which will satisfy the cultivator at once whether the borders are dry or not.

Figs.—Trees growing in pots or borders and that have been cleared of their first crop of fruit will need a good supply of water at the roots. Liquid manure may be afforded at every alternate watering. Apply a mulch of horse manure. If large fruits are desired, the crop must be well thinned. Syringe the trees frequently to keep the foliage clean and free from red spider. Tie in young shoots. Cut out suckers and any gross wood, thus exposing the foliage to plenty of light. Figs in pots which were forced early, and the fruit gathered, should be placed out-of-doors to mature their wood. Plunge the pots almost to the rims in coal ashes in a warm, sheltered position, but one exposed to the full rays of the sun. Repot any plants requiring more rooting space. Be careful, however, not to put them into pots which are of larger sizes than necessary, as Fig trees fruit best when the roots are confined in a moderately small space. The compost should consist of three parts good turfy loam and one part lime rubble, with a 6-inch pot of chemical manure added to each barrow-load of the compost.

Melons.—Plants growing in frames heated by hot-beds require to be most carefully watered, as the fruits are now netting, and if an excess of water be applied at this stage, the plants will collapse. If the bottom-heat is deficient, apply a fresh lining of short grass and horse manure. These materials are best prepared by making a good heap of them to ferment, mixing and turning the heap until the excessive heat has escaped. Afterwards make up a good lining all around the frame, first removing the old manure from the frame. Admit rather more air to the frames as soon as the fruits commence to colour.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Calanthes.—The earlier flowering varieties of the deciduous *Calanthes* as *C. Veitchii*, *C. bella*, *C. Victoria Regina*, *C. Burfordiensis*, *C. Harrisii*, *C. Sedenii*, *C. Bryan*, *C. amabilis*, &c., having now filled their pots with roots will require copious waterings whenever the compost becomes dry, but during dull weather water must be afforded with the greatest discretion, or the new leaves and pseudo-bulbs that are now forming will become spotted and diseased. Plants that are thoroughly well rooted may be supplied with alternate waterings with weak liquid cow-manure. It is important at this period to expose these plants to all the sunlight possible without the leaves being scorched; also to admit plenty of fresh air. The plants should be elevated well up to the roof glass, and so arranged that each will obtain its full share of sunlight. At Burford the glass immediately over these plants was stippled over when they were re-potted; this stippling has now become almost transparent, and thus affords just sufficient light to invigorate and solidify the bulbs. Under these favourable conditions the plants dry very quickly, and require almost unlimited supplies of moisture. Where the lath blinds or the ordinary canvas shading is used, the amount of shade afforded by them should be gradually lessened each day, so that in a few weeks, when the plants have become accustomed to the extra light, these shadings may be safely dispensed with.

Chysis.—The different varieties of *Chysis*, as *C. bractescens*, *C. aurea*, *C. Sedenii*, *C. Chelsoii*, *C. Limminghei*, and *C. laevis*, which are still growing, may be arranged alongside the *Calanthes*, and should be afforded the same kind of treatment until growth is complete, when they may be returned to the *Cattleya*-house to rest.

Epidendrums.—Such species as *E. prismatocarpum*, *E. auriculigerum*, *E. radiatum*, *E. cochleatum*, *E. contusum*, *E. inversum*, *E. variegatum*, *E. fragrans*, *E. pentotis*, *E. glumaceum*, *E. lanipes*, and others of this section, are now commencing to grow afresh, and any that stand in need of re-potting may be given attention. The pots should be made about one-half full of drainage materials, using a compost consisting of two parts of rough fibrous peat to one of sphagnum-moss. Make the compost moderately firm about the roots and keep the base of each plant on a level with the rim of the pot. Place them in a light and moist position in the intermediate house, and afford water very carefully until roots become plentiful, neither letting them become very dry nor too moist.

Cool House.—*Lycaste Skinneri*, *Odontoglossum Insleyi*, and *O. grande* are in full growth; therefore they will require copious waterings until the bulbs are fully made up. Examine the young growths occasionally, and see that no water remains in them, as this would cause them to decay.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. Ford, Pencarrow, Cornwall.

Liliums.—A good rule to observe in respect to the garden species and varieties is to let well alone. Established clumps which flower well, and produce healthy foliage, should not be disturbed, but if a good top-dressing of rotten manure be afforded them at any time during the next three months it will be beneficial. Those clumps which show signs of partial exhaustion by producing smaller flowers and thin foliage (which is apt to die away before the flowering is completed) should now be lifted, sorted, and planted afresh in thoroughly well-prepared soil. Most *Liliums* revel in a deep, moist, rich soil; the North American species usually require the addition of peat, and *Liliums candidum*, *chalcidonicum*, and *umbellatum* succeed well in lighter soils. *L. candidum* and *L. Martagon* should be planted shallowly, just covering the bulbs with soil, so that they may have plenty of warmth from the sun. *L. chalcidonicum* and its varieties should be planted more deeply. It is only in the more favoured gardens that such gorgeous *Liliums* as *L. auratum* and *L. speciosum* are hardy enough to stand

* The Apple Mildew is sometimes erroneously called *Sphaerotheca Mali*. As I have pointed out in my *Monograph of the Frysphaeaceae*, p. 41, the use of this name is clearly wrong.

the winters out-of-doors and flower well in the following summers. In order to cultivate these varieties well, the bulbs should be potted as soon after they are received as possible. Put them into frames for the winter season, and plant them in their positions in the garden late in the following spring. Fresh manure afforded at the time of planting is fatal to the well-being of nearly all Liliiums. Shelter from rough winds is necessary.

Penstemons.—Cuttings should now be taken of the best varieties. Where they are grown in large numbers it is usual to devote a frame for their reception; for smaller quantities the cuttings may be inserted in pots or boxes and placed under a handlight, keeping the atmosphere of the frame close until the cuttings have made roots, when air should be gradually admitted to harden the young plants.

Perennial Phloxes produce much finer trusses, and the flowers last longer, when young plants are put out each year, especially if the plants are grown in light soils. Cuttings firmly inserted in sandy soil, and treated as advised for Penstemons, will make roots readily at this season of the year.

Half-hardy shrubs have a better chance of passing safely through the average winter if the growths are well ripened, and to attain this end it is necessary to cut away sufficient shoots to allow the remaining branches plenty of room for the free circulation of air. Any side-shoots made after this date should be pinched out.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq.,
Cobham Park, Surrey.

Coleworts.—Make good any failures that have occurred in former plantings, and continue to make fresh plantations, for although Coleworts are not particularly hardy, if the autumn is a favourable one they will make useful produce before there are any severe frosts.

Cabbage.—Where an early sowing was made, the plants will now be large enough for planting out. These will be followed in due course by plants forming the main crop, for although it is satisfactory to have an early batch, it is not advisable that a great quantity should be so forward. The earliest plants are not so likely to stand well through the winter, and usually they are the first to "bolt" into seed.

Winter vegetables.—The number of plants of all kinds of winter vegetables that have gone blind this season has been exceptionally large. If any may still be found in the quarters, they should be at once removed and their places filled with fresh plants from the seed beds, or, better still, from later sowings that were made principally for this purpose, a system which has much to commend it where it can conveniently be carried out.

Lettuce.—Continue to put out plants from previous sowings of hardy varieties of both the Cos and Cabbage types, whichever is in most demand, choosing warm, sunny positions. During the early part of September fill any cold frames which may be available, with such Lettuces. From sowings made at the present time, and at fortnightly intervals in September, under handlights, of the French variety *Petite Noire* a supply of tender Lettuces may be obtained from November all through the winter and early spring. "All the Year Round" I consider a splendid variety, but for this particular season I do not think the *Petite Noire* is equalled. The ground for growing these winter Lettuces must be liberally enriched with good, short, thoroughly-decayed manure, and a sprinkling of soot. A very little air may be admitted to the young plants during the hottest days of autumn, but afterwards the cloches or frames must be kept quite close, never on any account admitting air. This variety will only excel under these conditions. Although grown extensively for supplying the Paris markets, it appears but little cultivated in this country, and I am convinced it would be a boon to many if it were better known, thriving, as it does, at the very worst season of the year.

Endive.—Plants raised from the earliest sowings will now be in course of blanching. Continue to put out plants from the later sowings in light, rich ground. If the plants are arranged

in beds, the process of blanching is easily carried out. When growth is finished, either one bed or a part of one bed, according to the demand, can be covered over with wooden shutters or anything conveniently to hand that will entirely exclude the light. Such a covering will at the same time generally prove sufficient protection from the weather.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq.,
Eastwell Park, Kent.

Forcing bulbous plants.—If a supply of bulbous flowers is required before Christmas, there should be no delay in potting the bulbs if this is not already done. Bulbs should be allowed to develop their roots before they are subjected to hard forcing. *Hyacinthus orientalis*, the white Roman Hyacinth, is one of the earliest subjects to flower; next follow the *Polyanthus* and the *Single Trumpet Major Narcissi*, also *Duc van Thol Tulips* in various colours, with others that will submit to early forcing, such as *Cottage Maid*, *Belle Alliance*, *La Reine*, and *Vermilion Brilliant*. The bulbs of all these should be potted in a compost consisting of equal parts loam and leaf-soil, with plenty of sand added. After potting, place the plants on ashes in the open, and cover them with leaf-soil, but when growth commences this should be removed.

Retarded plants.—These are useful for furnishing a supply of flowers in mid-winter. *Lily of the Valley* is one of the commonest plants whose season of flowering is retarded by means of a cold atmosphere. The crowns can now be purchased cheaply, and they should be ordered to be delivered at intervals of two or three weeks, so as to ensure a succession of flowers. Retarded plants of *Astilbe* (*Spiraea*) can also be purchased at a reasonable price, and a few of these should be started into growth at intervals throughout the winter. Some of the newer *Astilbes*, with pink flowers, are valuable acquisitions.

Salvias.—*S. azurea grandiflora* (syn. *S. Pitcheri*) is a very beautiful plant when in flower, and is valuable in gardens where blue flowers are in request. The plant is of graceful habit, and is one of the earliest of the shrubby species to flower, for its blossoms are developed early in autumn. If the plants are growing in a bed or border, lift and pot them as soon as the flower-spikes are seen. *Salvia splendens*, variety *grandiflora*, is a great improvement on the type, the flower-spikes being larger, the inflorescences more brilliant, and the plant of a compact habit. A batch of this plant should be grown for furnishing the greenhouse or conservatory before the *Chrysanthemums* come into bloom. The cut flowers are suitable for table decoration. Other species of *Salvias* which flower later in the season are *S. coccinea*, *S. involucrata* var. *Bethelii*, *S. rutilans*, and *S. gesneriflora*. All these are useful for the furnishing of large conservatories or corridors.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to LORD CLINTON, Bicton,
East Devon.

Apples.—Early varieties that ripen during the latter part of August and early in September will not keep in good condition long after they are gathered; the fruits are best when eaten within a day or two, as they so quickly deteriorate in flavour. Among cooking varieties now in season, few can equal *Ecklinville Seedling* and *Lord Suffield*, closely followed by *Potts' Seedling* and *Duchess of Oldenburgh*. Not one of these will keep good for long, so should be turned to good account at once. Good prices should be secured for any which are to be sold, for Apples are far from being a heavy crop.

Pears.—Daily attention should be given to the few varieties that ripen at this season, such as *Jargonelle*, *Beurré de l'Assomption*, *Beurré Giffard*, *Williams' Bon Chrétien* and *Clapps' Favourite*. Allow the fruits to become fairly ripe before gathering them, so that they may be eaten almost direct from the tree when their full flavour will be appreciated. With so little sun, it is feared that flavour will be poor in most fruits. Now that the small and bush fruit have been mostly gathered, Pear trees against walls should be netted to prevent the tom-tits

pecking the fruits. Isolated specimens can be tied up in small bags of hexagon, or small pieces of fish netting and tied in at the stem of the fruit.

Nuts.—Filberts and Cobs promise good crops, whilst Walnuts are very scarce. Cut out any sucker-growths from the base of Filbert bushes, and see that squirrels do not take the fruits, the gun being the best means of scaring them, if not allowed to kill. Caterpillars have not ribboned the foliage this year as in some seasons, owing to our having sprayed the trees early in spring after the fruit trees were finished.

Apricots.—Keep the secondary shoots pinched back to the first leaf, and shorten any robust shoots on young trees, in preference to pruning them in winter. As the trees become divested of the fruit, give them a good washing with either clear or soapy water. Examine the border, and if the roots are found to be dry, afford the border a heavy watering, replacing the mulch for a few weeks longer to retain the moisture in the soil. Loosen any tight ligatures on recently-budded stocks, and syringe them overhead in the evening. Such stocks growing in soils of a porous nature may be given a good root-watering.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

Prosecutions.—Few duties are more unpleasant than the prosecution of visitors for the infringement of the park by-laws. As the chief official of the department is invariably held responsible for these matters, and has to decide what cases are to be proceeded against and which have to be dropped, he often finds himself in a very delicate position, in which much tact has to be exercised. In this, as in everything else where judgment has to be used, it is always best to decide each case upon its merits instead of making a hard and fast rule of treating all infringements of by-laws alike. Needless to say, class distinctions should never be taken into consideration in deciding these questions.

Minor and other offences.—There are many by-laws which are broken nearly every day of the week, but unless the same persons persisted in disregarding them, no official would ever think of taking proceedings against the offenders. Walking on the grass, jumping over seats, or taking dogs into parks without being on leash, are minor offences. But there are matters about which it is quite beyond the province of an official to use his own discretion, and such cases must go before the magistrates. Any infringement of by-laws having for their object the moral or physical protection of the public should never be condoned, and the culprit, whatever his or her station in life, should be proceeded against.

Stealing plants or flowers.—When it comes to picking flowers, stealing plants, or doing wilful damage, it is a case for the superintendent to take what steps he thinks best, so as to adequately punish the offenders and at the same time prevent others from following their example. In some parks every person caught picking a flower is prosecuted, while in others, beyond frightening the thieves, nothing further is done. For many years past we have adopted a method of dealing with flower stealers which has proved satisfactory. When the culprits are children they are taken to the office, where a lesson is read them, and a park constable in uniform is sent to inform their parents and warn them that if their children are ever caught stealing flowers again they will be prosecuted. When we have to deal with older persons, if they show signs of sorrow they are cautioned and let off, but if they are impertinent or show no regret for their action, they are summoned. During our experience we have never had the same persons accused twice of flower-stealing. We are not so lenient with plant stealers or with those who do wilful damage, but it greatly depends upon the value of the plants taken or the amount of damage done whether we institute proceedings or not.

Notice of prosecutions.—It is sometimes expedient to post up in prominent positions in the park notices of prosecutions which have taken place for the infringement of by-laws. This should be done as little as possible, and care should be taken never to publish the names of the offenders.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and fully signed by the sender. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR SEPTEMBER.

TUESDAY, SEPTEMBER 3—
Roy. Hort. Soc. Coms. meet.
Nat. Amateur Gard. Assoc. meet.

WEDNESDAY, SEPTEMBER 4—
Glasgow and West of Scotland Hort. Sh. (2 days).
Hemel Hempstead Fl. Sh.

THURSDAY, SEPTEMBER 5—
Nat. Dahlia Soc. Ex. at Crystal Palace (2 days).

SATURDAY, SEPTEMBER 7—
Pollockshaw Fl. Sh.
Soc. Franc. d'Hort. de Londres meet.
German Gard. Soc. meet.

TUESDAY, SEPTEMBER 10—
Scottish Hort. Assoc. meet.
Dahlia Sh. in Manchester Botanic Gardens (2 days).

WEDNESDAY, SEPTEMBER 11—
Roy. Caledonian Hort. Soc. Sh. at Edinburgh (2 days).

THURSDAY, SEPTEMBER 12—
London Dahlia Union's Sh. in Botanic Gdns., Regent's Park (2 days).

FRIDAY, SEPTEMBER 13—Hamilton Fl. Sh.

SATURDAY, SEPTEMBER 14—Newton Mearns Fl. Sh.

MONDAY, SEPTEMBER 16—
Nat. Chrys. Soc. Floral Com. meet.

TUESDAY, SEPTEMBER 17—
Roy. Hort. Soc. Coms. meet.
Brit. Gard. Assoc. Ex. Council meet.

SATURDAY, SEPTEMBER 21—German Gard. Soc. meet.

TUESDAY, SEPTEMBER 24—
Nat. Rose Soc. Autumn Sh. at R.H.S. Hall, Westminster.

FRIDAY, SEPTEMBER 27—Roy. Botanic Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—59.4°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, August 28 (6 P.M.): Max. 75°; Min. 52°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, August 29 (10 A.M.): Bar. 29.9; Temp., 70°; Weather—Bright sunshine.

PROVINCES.—Wednesday, August 28 (6 P.M.): Max. 60°, Colchester; Min. 56°, Lincoln.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—
Sale of Dutch and other Bulbs at Stevens' Rooms, King Street, Covent Garden, at 12.30.

MONDAY TO FRIDAY—
Dutch Bulbs in variety, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

FRIDAY—
The whole of the Greenhouse Plants, Glass Erections and Sundries, at the Woodstock Nurseries, Golders Green, N.W., by Protheroe & Morris, at 12.

Grammatophyllum speciosum at Peradeniya.

We have received from Mr. Hugh A. MacMillan a photograph of a plant of this species in flower in the Royal Botanical Gardens, Peradeniya, Ceylon (see fig. 69), who describes the specimen as being at its best on July 17th last. So remarkable are the size and form attained by the leaves and inflorescence of *Grammatophyllum speciosum* under suitable conditions in the tropics, that all other Orchids appear but miniatures in comparison. The species is a native of some of the Malay Islands, and a plant was introduced to the gardens at Peradeniya about the year 1850. Like certain other introduced species of plants, it flourishes there to an extent seldom seen in its native habitat. This was not the case, however, until recently, for though the *Grammatophyllum* had apparently been grown there for about 40 years, it was

not until 1898 that, in consequence of a change in its treatment, it really began to assert its majestic habit. Up to that year it was tenderly nursed on an old, decaying tree stump under the partial shade of surrounding trees, thus imitating, it was thought, as far as practicable the conditions of its native habitat. The result of removing the plant from this tree to a sunny position, writes Mr. MacMillan, the curator of the gardens, and planting it in a mound of turf, decayed manure, charcoal, broken bricks and laterite stones, was that it soon commenced to grow rapidly, and about a year later threw up



FIG. 68.—AERIAL ROOTS OF GRAMMATOPHYLLUM SPECIOSUM WHICH ARE NOT PRODUCED FREELY AT PERADIENYA.

six flower spikes. It has since flowered more or less every alternate year, and in July last was bearing 26 magnificent inflorescences. It is obviously a great effort on the part of the plant to produce at one time so enormous a crop, and it is not surprising that the specimen does not repeat the process every year. From the first appearance of the spikes above ground to the visible setting of the first fruit occupies about four months, and two months more are required to ripen the stout pod-like fruits. The minute, brown seeds are produced in great quantity, but hitherto these have not found at Peradeniya conditions necessary to their germination, even though afforded artificial aid. Therefore the only means available for the propagation of the species is by division.

Though so shy in flowering, it is worthy of note that but few plants seem to grow so well under such varying conditions as the

"Giant Orchid." By nature it is chiefly epiphytal, and may be found growing upon trees, but at Kew it is treated as an aquatic, having been grown there for many years in the tank in the Victoria Regia House; whilst at Peradeniya it is most successfully grown as a terrestrial or ground-plant. At Peradeniya it has become so accustomed to the terrestrial treatment that it seems to have gradually lost the habit of producing the characteristic, upright, spiny roots, which are invariably present when the plant is growing under the conditions of an epiphyte. It has been supposed that these peculiar roots (see fig. 68) are associated, under normal conditions, with the absorption of water and nutriment from decaying vegetable matter. At Peradeniya they have hitherto been produced chiefly in the dry season.

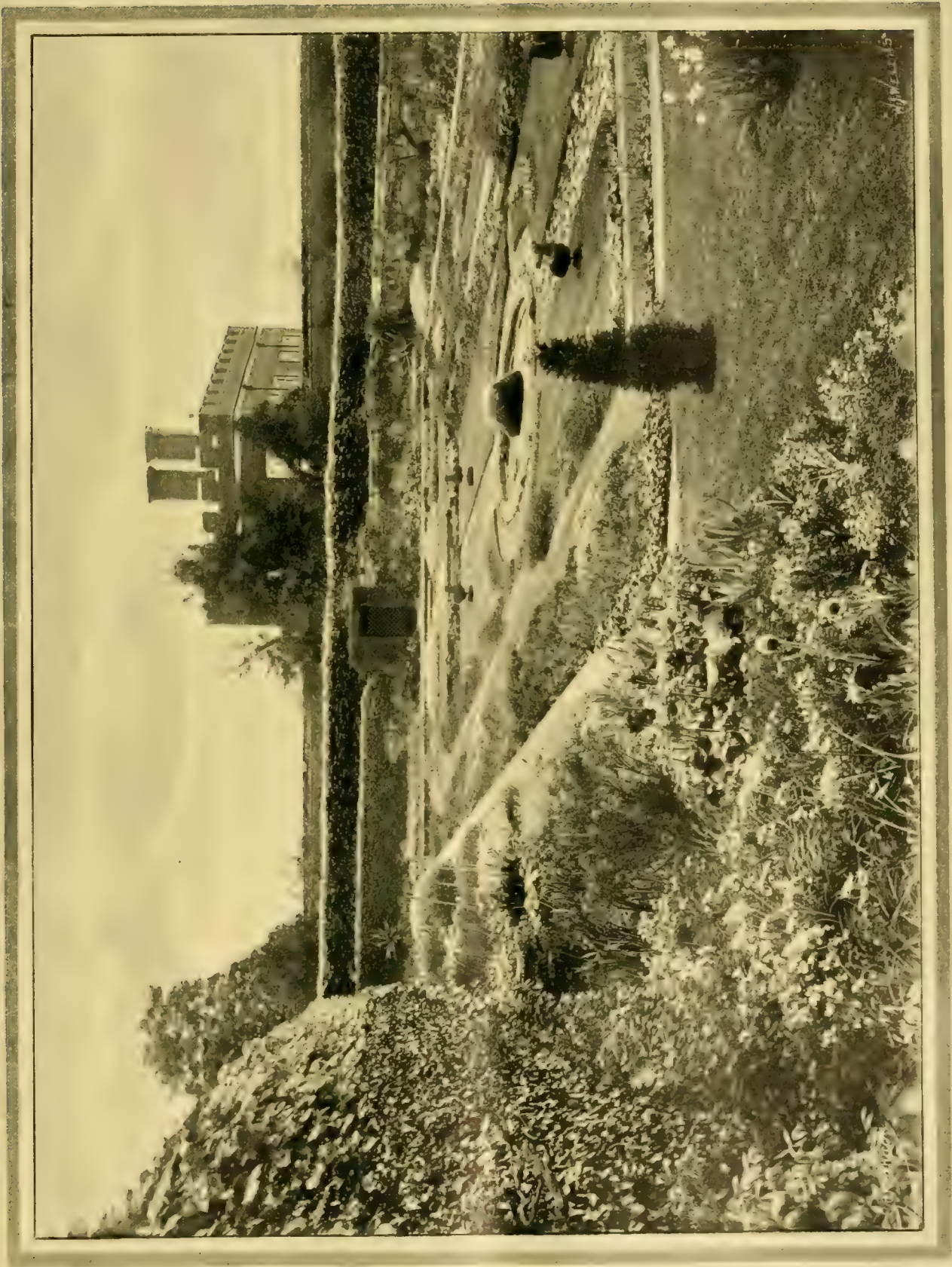
Grammatophyllum speciosum is a species that, for obvious reasons, is seldom found in Orchid collections which have to be cultivated in glasshouses in temperate climates. There are, however, a few cases on record of the plant having flowered in English hot-houses. In October, 1859, a writer in these pages recorded a plant then in flower at "Nonsuch House," in Surrey, and he for some reason referred to it as the "Letter Plant." The plant now cultivated at Kew, and which was presented by Messrs. Sander & Sons, made a poor effort to blossom in 1901, and the specimen is developing inflorescences at the present time. The species has also flowered in Sir Trevor Lawrence's collection at Burford (see fig. in *Gardeners' Chronicle*, August 4, 1906, p. 86). As regards the flowering of this species in the tropics, Mr. Curtis, late of the Botanic Gardens, Penang, described a plant in bloom there in 1903 as having 24 flower-spikes.

The specimen recently in flower at Peradeniya, and which it is believed has not yet attained to its maximum size or vigour, is apparently the finest yet recorded. It bore 26 stout, erect racemes, and these varied from 5½ to about 8½ feet in height, each having over 100 flowers. Thus the plant carried nearly 3,000 single flowers, which are sweet-scented and borne mostly towards the tops of the racemes. They measured individually 5½ to 6 inches across. The ground colour is of a yellow tint, profusely spotted and blotched with purple or chocolate, the pedicels being greenish-white. The Peradeniya plant is furnished with about 70 stems or pseudo-bulbs, these varying in length from 5 to 10 feet, and bearing a hundred or more ribbon-like leaves, which are 20 to 30 inches long.

We have reproduced an illustration of a single flower at fig. 70.

The foliage to be seen in the background of fig. 69 is chiefly that of *Monstera deliciosa*, the "Giant Creeper" of Mexico, as it is sometimes called.

OUR SUPPLEMENTARY ILLUSTRATION.—The illustration which forms the supplement to our present issue shows a view in the Fernery at Shipley Hall, Derbyshire, the residence of E. MILLER MUNDY, Esq. (gr. Mr. J. C. TALLACK). The photograph could only take in the back and central portion of the house, and an *Adiantum* clothed rockery at the front of the house is, therefore, not visible. Sufficient is shown, however, to give a good idea of the interior of the house. The rock-



Photograph by W. J. Vasey.

VIEW OF AN ENCLOSED GARDEN AT HAMPTON COURT PALACE.

work was built about 14 months ago, and was planted in the month of May last year. Most of the plants have succeeded well, and the Ferns, *Begonia Rex* in variety, *Periplocas*, and a few other species afford a very good effect, the *Begonias* showing especially well when illuminated with electric lamps placed behind the plants. This Fernery forms a continuation from the Water-lily house, illustrated in our issue for August 17, and which is itself entered from the long corridor attached to the residence.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees of the Royal Horticultural Society will be held on Tuesday, September 3, in the Society's hall, Vincent Square, Westminster. At the afternoon meeting of Fellows, at 3 o'clock,

Elgin, where a great quantity of young trees of numerous species, of which the Scots Fir and the Larch predominate, are grown. At the Pinefield Nursery of this firm were seen 4,000,000 one-year-old plants of Scots Fir, 2,000,000 two-year-old trees of Scots Fir, 4,000,000 one-year-old specimens of Larch, and about 3,000,000 other seedling forest trees. Large numbers of young forest trees were also seen at five other nurseries belonging to Mr. WISEMAN.

MR. W. H. YOUNG, who for 17 years was Orchid grower to the late Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, has purchased the nursery and seed business carried on at the Mercury Nursery, Romford, Essex. Mr. YOUNG is a member of the Orchid Committee of the Royal

"the weather" has such a far-reaching influence upon the well-being or otherwise of the plants under their charge, and although no word is as frequently on their lips, yet how few gardeners appear to have even an elementary idea as to how weather changes in this and other countries are brought about. It may be they see no use in acquiring the necessary knowledge, considering how helpless even the best informed must always feel in regard to such changes—whether favourable or unfavourable. Or, may not this indifference rather arise from the science of meteorology being so seldom treated in such a clear and interesting manner as to enable those having no previous acquaintance with the subject to know, for instance, where our rainfall comes from, why the barometer is so often misleading when regarded simply as a "weather



FIG. 69.—GRAMMATOPHYLLUM SPECIOSUM IN THE PERADENIYA BOTANICAL GARDENS. THE PLANT PRODUCED 26 RACIMES, EACH BEARING UPWARDS OF 100 FLOWERS. (See page 168 and fig. 70.)

a lecture on "Lesser Known Orchids," illustrated by lantern slides, will be given by Mr. F. W. MOORE, Glasnevin.

PRESENTATION.—Mr. A. C. SMITH was presented on the 21st inst., by the employees on the Lydhurst Estate, with a marble timepiece on his leaving to take up his new duties as Assistant Superintendent of the Royal Horticultural Society's gardens at Wisley.

ROYAL SCOTTISH ARBORICULTURAL SOCIETY.—The annual excursion of this society took place recently, Elgin being selected as the headquarters for the visit. On Wednesday, August 8, the estates of Orton and of the Duke of RICHMOND and GORDON at Fochabers were inspected, and visits were paid to Mr. EDWARD WISEMAN's extensive nurseries in the vicinity of

Horticultural Society, and for several years he has written the yearly calendar in these pages under the heading "The Orchid Houses." Our readers will join us in wishing Mr. YOUNG every success in his new departure.

CARNATION ANDREW CARNEGIE.—It is stated in *The American Florist* that a fine new Carnation, to which the above name has been given, appeared as a sport with the Chicago Carnation Company of Joliet, Illinois, and also with Mr. J. P. SNOW, Sharon, Massachusetts. It is said to be in habit identical with the parent Harlowarden, but the colour is scarlet.

"WEATHER."—This is a little pamphlet written by the Hon. H. A. STANHOPE, and published by the Agricultural and Horticultural Association, Ltd., London, at the price of one penny. Although

glass," why the winds in the British Isles are so variable in strength and direction, and other similar questions of considerable interest to all those engaged in horticultural pursuits. This little pamphlet is therefore to be welcomed, as the author in the small compass of 20 pages manages to deal successively with the subjects of temperature, clouds, atmospheric pressure, rain, thunderstorms, wind, and forecasts in such an interesting way, and by means of such simple language, that all his explanations can be readily understood by the ordinary reader; while those who will take the trouble to study it carefully will be able to gather helpful information as to some of the laws which govern the apparently hopeless irregularities in the movements of our atmosphere. The illustrations scattered through its pages will also prove of service.

NATIONAL DAHLIA SOCIETY.—The annual show of the National Dahlia Society, to be held on September 5 at the Crystal Palace, is expected to be very successful. Mr. H. L. BROUSSON, honorary secretary to the Society, writes us to the effect that the Dahlias promise to be of unusually good quality, owing to the frequent rains and warm nights.

AN ORCHID AUCTION AT SCHONBRUNN.—

As a consequence of the overcrowding of the Orchid houses in the Imperial Gardens at this palace of the Austrian Emperor, 2,000 plants, as in the previous year, have been offered for sale recently. The plants were put in small lots and included some that were raised in the Schönbrunn Gardens. One of these novelties carries the name *Cattleya Schönbrunnensis*, and is the result of a cross between *C. Bowringiana* × *C. maxima floribunda*. The blooms are said to be of a larger size, darker in colour, and the lip more beautifully marked than those of the parents. Cut blooms of choice *Cattleyas*, *Dendrobiums*, and *Cœlogynes* were likewise sold by auction. Such sales will be held annually at Schönbrunn.

THE STRAWBERRY CROP IN GERMANY IN 1907.—

Herrn L. MAURER, a well-known cultivator of small fruits at Jena, states, in the *Deutsche Gärtner-Zeitung*, that, owing to frosts in the spring, many of his Strawberry plants lost their leaves, and crown buds, even such varieties as have been hitherto regarded as immune from loss by frost, namely, the Alpine varieties. Some of those which suffered worst are varieties of French origin, as *Belle de Meaux*, *President Meurin*, and even the old *Gloire d'Orleans* have not bloomed at all. Herrn MAURER mentions varieties which the older generation of gardeners were well acquainted with, but which have dropped out of general cultivation in these islands, viz., *Bearn's Mammoth*, *Sabreur*, *Victory of Bath*, *Teutonia*, *Dr. Neubert*, *Globe*, *Duke of Edinburgh*, *Duc de Magenta*, *Helvetia*, *Belle de Bourg*, *La Reine*, &c. The varieties *St. Joseph* and *Antoine de Padoue*, and the Chilean Strawberry, *Wilmot's Superb*, lost a high percentage of plants. On the contrary, *La Reine*, *Reine des Precoces*, and *Napoleon III.* suffered but few losses. A further remarkable experience was noted in a number of popular English-raised varieties, as *Lord Suffield*, *Lord Napier*, *Guntton Park*, *Stevens' Wonder*, *British Queen*, *Jubilee*, *Monarch*, *The Countess*, and *Laxton's No. 1* were frozen out, to a great extent, in the previous winter. His observations of English varieties proved that many have not become acclimatised. German and French varieties succeed better under similar conditions. Of English varieties that are hardy and fruit freely are *Dr. Hogg*, *Fillbasket*, and *James Veitch*. *Laxton's Noble* withstood 22° Reaumur, but the beds of all of these must be renewed every third or fourth year at the farthest. This notwithstanding these varieties are reckoned among the best that he cultivates. The three hardiest and most suitable Strawberries for that part of Germany are *Jucunda*, *Sharpless* and *Ker's Prolific*. These grow vigorously and withstand frost, even in heavy, wet land. Others that come next in point of hardiness and fruitfulness are *Kaiser's Samling* (Seedling), *Noble*, *Deutsch-Evern*, *König Albert von Sachsen*, and *Comet*.

DEATHS IN FRANCE.—In the obituary columns of the French horticultural journals we note the death of M. GEORG BUCHIER, proprietor of one of the largest firms in Paris. He was chiefly concerned with the distribution of novelties in plants. M. POUBELLE, a former Ambassador, and the first President of the French Dendrological Society, died in Paris recently at the age of 63 years.

ROOT ACTION AND BACTERIA.—In our issue for August 10 we reproduced a letter, printed in *Nature*, from Mr. F. FLETCHER. The following reply by Mr. SPENCER PICKERING in the same journal is interesting:—The experiments mentioned by Mr. F. FLETCHER in *Nature* of July 18 (p. 270) bear only on the functioning of roots once they have come into activity, not on their

been previously treated in various ways; the water-contents of the medium were the same in every case, and re-inoculation from the air was prevented. All the experiments were made in duplicate, and all the duplicates were remarkably concordant. The results were that seeds in unheated earth began to germinate on the ninth day, the total germination being 65 per



FIG. 70. *GLADIOLUS SPECIOSUS* TO SHOW SINGLE FLOWER: COLOUR, YELLOW SPOTTED WITH PURPLE OR CHOCOLATE. (See page 168.)

passage from the dormant to the active condition. The probable analogy between the bursting of a dormant root-bud and the germination of a seed has led me to investigate the latter, and some of the results already obtained tally exactly with those obtained with trees. Seeds of *Lolium perenne* sterilised by carbon disulphide, were planted in soil or sand which had

cent.; in earth heated to 250°, 150°, 95°, and 80°, no germination has occurred yet, although 22 days have now elapsed, while in the case of earth heated to only 60°, germination did not occur until the eighteenth day, and the total germination is only 30 per cent. Dr. RUSSELL mentions that in his experiments he had not noticed any retardation to be produced by the sterilisa-

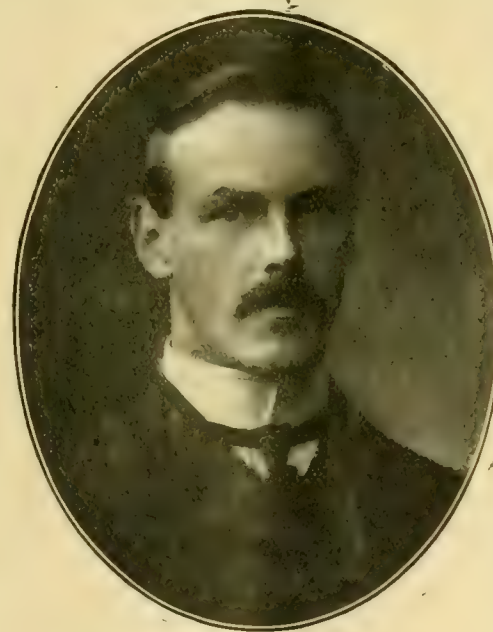
tion of the soil; but in his experiments, as well as in my own Apple trees, no steps were taken to guard against re-inoculation from the air, and such re-inoculation would be very easy in the case of seeds just below the surface of the soil. Another explanation may be that we have not used similar seeds; and from some experiments with mustard, now in progress, it is evident that different seeds behave differently, though the difference may be due to the imperfect sterilisation of the seeds themselves in some cases. Dr. RUSSELL has been good enough to examine my experiments whilst in progress, and I believe that he is satisfied with the results so far as they go at present. There is not sufficient evidence yet to show whether the bacterial action is a direct one on the seeds, or whether it is an indirect one, as Dr. RUSSELL suggested, modifying some chemical change produced in the soil by heating. The very low temperature (60°) which suffices to affect the germination tells against the view that chemical change is one of the governing factors, as also does the fact that the results obtained with sand are similar to those obtained with earth. On the other hand, it was found that with soil which had been heated to 150°, and then re-inoculated, germination was much retarded, and was very feeble, this pointing to some chemical change which was not counteracted at once by the re-inoculation. The view that plants in growing charge the soil with something which is toxic to other plants was put forward a year or two ago by Dr. WHITNEY, but the evidence adduced for it seems to have been very inconclusive; the details of Mr. FLETCHER's results in this direction will, therefore, be expected with considerable interest. We have, during the last three years, been endeavouring to ascertain whether any action of this sort can account for the effect of Grass on trees, trees having been grown in earth or sand in pots and watered with leachings from earth or sand in which Grass was growing. The results, however, have been entirely negative.

A NURSERYMAN'S VISIT TO CANADA.—Mr. JOSEPH CHEAL, a member of the firm of Messrs. J. CHEAL & SONS, nurserymen, Crawley, has recently returned from a visit to this important colony. In the course of his journey he visited the Okanagan Valley, where the large fruit estate started by Lord ABERDEEN about 14 years ago is situated. The fruit-growing industry in British Columbia bids fair to become an important one. The Okanagan estate is now managed by a company (the Coldstream Estates, Limited), and they are fast developing their 13,000 acres, clearing the land, dividing it into farms, erecting buildings, and planting the ground with fruit trees. It is a lovely valley; the greatest drawback seems to be the drought of summer, and irrigation is necessary to bring the fruit to perfection. A great irrigation scheme is in preparation for supplying the whole district. The older plantations of Apples at the time of Mr. CHEAL's visit were carrying splendid crops, which were being severely thinned. Mr. CHEAL regards the prospects in British Columbia for fruit growing as being very favourable. The climate is greatly tempered by the nearness of the Pacific Ocean and also the sheltering mountains, but the district does not experience anything like the extremes of temperature that are found further inland, for Peaches and Grapes grow even in the open air. The fruit industry is evidently only in its infancy in this colony, but there is an enormous demand for produce over the great prairies and growing cities of the Central Provinces, where it is practically impossible to grow fruit. Vancouver, Mr. CHEAL describes as a city of delightful situation, nestling amongst hills and forests round a magnificent harbour with rocky promontories. One of these, 960 acres in

extent, is reserved for a public park, and contains many noble specimens of the original forest trees. The largest of these, *Thuya Lobbii*, has a hollow trunk with irregular, warty sides that measured 57 feet round, whilst another beautiful symmetrical specimen measured 42 feet in circumference at 4 feet from the ground and towered up to probably 200 feet in height.

A GARDENERS' UNION FOR LOWER AUSTRIA.—The gardeners of Lower Austria have founded an association and will establish a number of branches in other places. At the inaugural meeting, which was numerous attended, many questions of importance to nurserymen and florists came up for discussion. The conditions of the trade-gardener, the pressing necessity for the introduction of a certificate of efficiency in this business; accident and sick clubs, railway charges as affecting the trade, and other matters were discussed.

THE ASSISTANT DIRECTORSHIP AT KEW.—We have pleasure in reproducing a portrait of Mr. ARTHUR WILLIAM HILL, M.A., who has recently taken up the duties of Assistant Director in the Royal Gardens, Kew. Mr. HILL spent several years as senior Demonstrator in Botany, and has



MR. ARTHUR WILLIAM HILL, M.A.

been lecturer in Botany at Cambridge University since 1905. He was elected Dean of King's College last year. He has written many botanical papers in scientific journals, and in 1903 he travelled in the Andes of Bolivia and Peru. Since the appointment of Sir DANIEL MORRIS as Director of the Imperial Department of Agriculture for the West Indies, the post of Assistant Director at Kew has remained unfilled, although it is common knowledge that the duties involved in the Directorship have pressed with increasing severity. Our best wishes go to Mr. HILL in his new and important appointment.

SAMUEL HENSHAW.—This widely-known and successful landscape gardener in the U.S.A., died on July 23, at the age of 63 years, in West New Brighton, Staten Island, New York.

Publications Received.—*Orchidee di Seme*, by Chas. Sprenger, being an extract from the *Bulletin* of the R. Società Toscana di Orticultura.—*The Botanical Magazine* (Tokyo).—*Bulletin* of the Imperial Botanic Garden, St. Petersburg. Vol. VII., pt. I.—*Guide to Experiments conducted at Burgoyne's (University) Farm, Impington*, and at other centres in the Eastern Counties (1906-1907). Issued by the Cambridge University Agricultural Department.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, ante, pp. 84-90.)

5.—SOUTHERN COUNTIES.

(Continued from page 146.)

SURREY.—The promise for good crops of all kinds of fruits was excellent, but cold nights have greatly thinned the fruits. Our soil is of a light sandy nature. *S. T. Wright, Wisley Gardens, Ripley.*

—Apples and Cherries are average crops in this district. Pears are not plentiful, but Plums are above the average in quantity; in fact, the trees are breaking with the weight of the fruits. Small fruit are about an average; Strawberries have been very good. *Geo. Jackman & Son, Woking Nurseries.*

—Of Apples, Warner's King is the only variety that is heavily fruited. All varieties of Pears are bearing a sufficient, but not an enormous, crop. Such heavy crops of Plums were never before seen in this district, and the fruits hang thicker than the leaves. Every tree requires at least half its fruits thinned. Strawberries were spoilt by the 12° of frost on May 20. *Rev. W. Wilks, Shirley Vicarage, Croydon.*

—In spite of the dull, cold, windy weather of spring-time, the fruits crops, with the exception of Apples, are very good in this district. Apples appear to have suffered severely from the unseasonable weather and from blight; the trees in some cases are presenting a half-dead appearance, and although spraying was carried out last winter, the trees have never before appeared so bad. *W. H. Honess, Cobham Park Gardens.*

—Differences of soil seem to make very little distinctions as to the extent of the fruit crops. Some kinds of fruits are good on all soils this season, whilst others are rather thin. Apples, whilst plentiful on some trees, are very few on many others, due, without doubt, to the frequent low temperatures and cold rains at the time the blossoms were expanded. The earlier blossoms on wall trees, also on Cherries, Plums and Pears seem to have suffered less—a fact of material importance when so much is being expressed in favour of later-blooming fruit trees to escape spring frosts. Bush fruits are abundant, and probably they were never better. That Black Currants have been so plentiful and fine serves to show that the ravages of the Currant mite are very far from being universal. *Alex. Dean, Kingston-on-Thames.*

—The fruit crops in this locality are above the average in quantity. All kinds of Apple trees are carrying large crops. Pears are somewhat fewer, but the fruits, being evenly distributed over the trees, promise to finish well. Plums are much too thick, and we have pulled off quite half the fruits. Cherries, both dessert and Morello, are a heavy crop. Peaches and Nectarines are an average quantity, and these fruits promise to mature well. Apricot trees set an enormous crop, necessitating much thinning of the fruits. Small fruits are very abundant. Strawberries are a light crop, and about ten days later than usual in ripening. The varieties Laxton's Latest and Bedford Champion require special mention. Nuts are plentiful. Walnuts are certainly later than usual. The soil here is a light, gravelly loam, and to keep the crops growing satisfactorily much rain is needed. *George Kent, Norbury Park Gardens, Dorking.*

SUSSEX.—Apples are very much under the average in quantity; varieties such as Irish Peach and Claygate Pearmain, that fruit at the ends of the previous year's growths, have the heaviest crops. The excessive rainfall caused many Strawberries to decay before they were ripe; slugs also spoilt many of these fruits. *Alex. Reid, Possingworth Gardens, Cross-in-Hand.*

—The fruit crops generally in this district are very good, with the exception of Apples, which are indifferent. The Apple trees are badly infested with blight, and this caused many of the fruits to fall. All other fruits are plentiful; the late-fruited varieties of Strawberries gave very good crops. The soil here is stony, and rests on the sandstone formation. Potatoes appear to be good: I have observed a little blight on the early varieties, but others are excellent. *W. Brunson, Brambletye Gardens, East Grinstead.*

— Considering the untoward season, the fruit crops are satisfactory. Strawberries suffered from the excessive wet and cold weather, and many of the first blooms were spoilt by frost. Raspberries, Gooseberries, Currants, Plums and Pears are plentiful and of excellent quality. A few trees of Bramley's Seedling, Dutch Mignonne and Lord Suffield Apples have very heavy crops, but, generally, Apples are scarce. We still have a few of last season's Apples. Our soil is a heavy loam on a stiff clay. *W. J. Langridge, Ote Hall Gardens, Burgess Hill.*

— Apple trees are more injured by fungus diseases and aphides than ever before in my experience. Most varieties of Plum trees have full crops, but many of the fruits are dropping off. Gooseberries are very abundant, and red and white Currants are above and black Currants about an average in quantity. Strawberries on light soils were practically a failure. Almost all vegetation is more or less unhealthy, as the result of the cold and wet season. The foliage on Currant and Apple trees has withered prematurely to a great extent. *W. E. Bear, Hailsham.*

— All fruit trees here are carrying average crops, whilst Plum trees are heavily laden with fruits. The earliest and best fruits of the Strawberries were spoilt by frost on May 18. Blight early attacked Apple trees; cold winds prevailed throughout June, and the south-west winds caused much damage to all trees, especially tall standards. The soil here is a stiff, heavy loam on a sub-soil of marl, clay, and sandstone. *A. B. Wadds, Paddockhurst Gardens, Worth.*

— The fruit crops upon the whole are satisfactory. Pears are a fine crop, and the foliage of these trees is fairly clean. But this cannot be said of Apple trees. Some varieties of Apples are laden with fruits, and many have been removed. Apples will be of bad quality, owing to an attack of aphids. Cherries generally are plentiful, but tender varieties are scarce, owing to excessively cold weather during the stoning period. Bush fruits, also Peaches, and Nectarines are all good crops. Raspberries are an excellent crop and of high quality. Strawberries have been good. Plums are an average in quality. Our soil is of a heavy nature, with a clay sub-soil. *W. A. Cook, Leonardslee Gardens, Horsham.*

— These gardens are situated about 100 feet above the sea level and in a valley, where the effects of late spring frosts are badly felt. Strawberries and other tender fruits suffer considerably from this cause. From May 18 to 20 the frost was very severe, and affected both Apples and Strawberries considerably. All kinds of small fruits are plentiful and of good quality, Raspberries in particular. Nuts are an average crop, and appear to be swelling well. Cherries have suffered much through the cold weather in June, and many of them failed to develop their stones, and on that account are falling off badly. We have not had such a heavy crop of Plums for several years, and trees of many varieties are overlaid. Apples, with the exception of a few early varieties such as Irish Peach, Ecklinville Seedling, The Queen, &c., may be considered a failure. Pears of most kinds are an average crop, and appear to be swelling well. Our soil is a cold, retentive one, and is not suited for the cultivation of Pears, though in dry seasons they succeed fairly well. *H. C. Princep, Buxted Park Gardens, Uckfield.*

(To be continued.)

LAW NOTE.

BANKRUPTCY.

In a comparative table issued by the Inspector General in Bankruptcy showing the total failures under Bankruptcy and Deeds of Arrangements among gardeners, florists and nurserymen, we find that in 1902 there were 40 failures with liabilities amounting to £63,273; in 1903 there were 49 failures with liabilities amounting to £33,603; in 1904 there were 49 failures with liabilities amounting to £29,104; in 1905 there were 31 failures with liabilities amounting to £27,065; in 1906 there were 32 failures with liabilities amounting to £62,343.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

ASTILBE DAVIDII.—Mr. Tallack's experience does not correspond with mine in regard to this plant. I think he must have a bad strain, such as may happen easily with a plant that seeds so abundantly as this species. I noticed the disagreeable change of colour of the fading flowers in some plants at Kew; but here, where the atmosphere is more humid and the soil cooler, that change for the worse does not take place, and I consider the plant one of the most valuable of those recently introduced. It does not require swampy ground, as Mr. Tallack suggests, but it grows vigorously in the ordinary border, if peat and sand are added when it is planted. If Mr. Tallack would like a few seedling plants, I can send him a few, or seed, if he prefers it. *Herbert Maxwell, Monreith.*

THE OLD CLOVE CARNATION.—Can any reader tell me whether there is in commerce a true pink-flowered form or sport of the old crimson Clove Carnation? I know there is a white one, although I have forgotten the name by which it is known. I ask because a railway employee here in Kingston has quite a large stock he has worked from a branch sport of a fine pink-flowered variety, the colour being a true pink, but deeper than is that of the well-known tree Carnation Enchantress. It is strange that, after cultivation in gardens for generations, a sport of this kind should arise in this man's garden. Both the old crimson Clove and the pink one are very robust and in perfect health. The sport greatly resembles the pink sport seen now somewhat plentifully from the old double crimson Pæony, and of this there is, though yet rare, a white-flowered sport also. *A. Dean.*

THE SOWING OF CYCLAMEN SEED.—I have sown seeds of Cyclamen for the past nine years by the first week in August. I find the best method is to use pans and to dibble the seeds in by the finger to a depth of a quarter of an inch, and at a distance of three-quarters of an inch between each seed. The seeds are germinated in a temperature of from 60° to 65°, and the soil in the pans is kept in a moistened condition. This is a better plan than placing them in a cold frame to germinate. After the seedlings appear they are still allowed this high temperature. I find the seedlings do not require to be transplanted when the seeds are sown in the manner I have described. The first potting should be done in February, and small pots should be used. The next shift should be given when the tiny pots are filled with roots, which should be about the middle of May, and they should still be kept actively growing in a warm atmosphere. As the season advances and the weather becomes more genial, the plants should be placed in a frame containing water pipes, so that a little warmth may be afforded should the weather turn cold. The final potting should be done in July or not later than early in August, but I prefer the July potting. Pots having a diameter of 6 inches will be of an ample size for their flowering. By this system of culture the plants will flower from the end of September until after Christmas. Some persons keep their plants of Cyclamen somewhat dry at the roots, but this is a mistake, for their large fleshy corms require plenty of moisture during their season of growth. A suitable soil for Cyclamen consists of good fibrous loam, some leaf-mould, lime rubble, dry sheep manure rubbed through a half-inch sieve, and a sprinkling of bone-meal. Do not have too rich a compost, as this will favour too much leaf growth. The secret to success in the culture of seedling Cyclamen is to grow them without a check from the start to the finish. *W. Fulford, Castle Eden Gardens, Co. Durham.*

NOTOSPARTIUM CARMICHAELIÆ.—This fine shrub is hardy in several parts of Scotland, and it soon assumes a large size. The finest specimen I have seen in Scotland is in the garden of Mr. W. D. Robinson-Douglas, Orchardton, Kirkcudbrightshire. This is growing in the rock-garden, where it has been for a number of years, without suffering much from the severe winters experienced since it was planted. It flowers freely, and is a beautiful shrub when in bloom, as is shown by your excellent illustration on page 146. *S. Arnott, Dumfries.*

DEFOLIATING TOMATO PLANTS.—This is not so generally practised as it was a few years ago, and those persons who still continue to remove the foliage in a ruthless manner cannot understand much about the functions of the leaf. The practice has probably resulted from a common error in obtaining too gross a growth in the plants, the result of either a free use of organic manures or an excess of moisture at the roots of the plants. Over-crowding at planting time has also necessitated the removal of many of the leaves subsequently in order to admit the necessary light and air. I have seen Tomato plants 4 feet or 5 feet in height stripped of two-thirds of their leaves at a single trimming. The removal of the leaves in this manner causes a severe check to the plant, and the harm can be seen at a glance by cutting open a few of the fruits, which are found to be poor in colour, hollow, and light in weight. Every cottager knows the ill-effects of frosts upon the Potato, and that when the foliage is badly injured the crop suffers accordingly. A frequent excuse for defoliating the Tomato is that it "assists the fruits to colour more quickly." When the plants are well cultivated, the proper development of the fruits follows as a matter of course, and in such circumstances the removal of a leaf-lobe in places does no appreciable harm. The greater mischief is done when the plant is divested of much of its leafage while the fruits are in an early state of development. *E. H. Jenkins, Hampton Hill.*

NEW ATTRACTIONS AT SHREWSBURY SHOW.

—Your suggestion as to the desirability of providing some fresh feature at this great show should command consideration. The introduction of a champion prize for collections of vegetables this year had a wonderful effect in stimulating public curiosity, as also great interest amongst professional gardeners. Throughout the first day no tent was so densely thronged as was the vegetable tent, everybody being anxious to see the winning exhibit. It is easy to understand how difficult it is to provide many absolute novelties in competitive classes. The grand decorative groups staged seem to have reached perfection in displaying the exhibitor's decorative art, as well as that of the plant cultivator. Yet even these have now reached a stage of comparative yearly reproduction in style and in beauty, and a new and novel method would be welcomed. I am not sure whether a class for groups of certain dimensions of literally any description of plants, the primary consideration being entire novelty in arrangement associated with beauty, would not prove to be a powerful attraction, could competitors only be induced boldly to break away from what is getting to be stereotyped styles and plants. The distinctly beautiful, as well as novel, arrangement set up by Mr. Amos Perry indicates something of the direction in which competitors might go. You mention a desire to see some change in the dessert tables. With respect to the fruit, there is naturally some variation in the arrangements and kinds each year on each table, but a change is needed in the flower decorations, and those in most cases seemed to be too dominating, too heavy, though built up of light flowers. There is more desire to decorate a table than to allow for conversation between the guests sitting at the table. Possibly, limiting the heights of the flowers to 12 inches—the judges being requested to make awards to them for lightness and beauty obtained from the simplest material and the smallest quantity—would put competitors on their mettle to produce something that would have the charm of novelty. Should a new challenge vase be provided for a champion Grape class, the vase should be made rather more difficult to win than it has been hitherto, and to that end I would suggest that no award be made of the vase except at least six of the bunches shown secure maximum points. That would prevent so great a prize ever going to an inferior collection. Mr. Shingler has done wonders to maintain a high standard of excellence, but even he secured but three maximums, and Mr. Mitchell, who came second, had but two maximums. In his table of points, the maximum of points capable of being obtained by Gros Maroc is put as 11 instead of nine. Only perfect examples should be regarded as worthy of such a splendid vase, but the cash prizes should be awarded in any case. *D.*

THE HORTUS DUROVERNI.—I have had a copy of a *Hortus* in my possession for some years past. It bears the name given above, and the title-page states that it is "a tabular and descriptive catalogue of perennial flower-roots, hardy trees and shrubs, greenhouse and hothouse plants, fruit trees, kitchen-garden and flower seeds, &c., cultivated and sold by W. Masters, Nursery and Seedsman, St. Peter's Street, Canterbury." The copy in my collection is the third edition, published in 1831 by Longman, Rees, Orme, Brown and Green, London, and comprises 130 pages of small type, bound in marbled covers of the size $4\frac{1}{2}$ inches wide by $6\frac{1}{2}$ inches long. The author was the father of the late Dr. Masters, a Fellow of the Horticultural Society and Curator of the Canterbury Museum, which latter institution he was the means of founding, and in the preface he "congratulates those friends who, fully entering into his wishes, promptly assisted in the undertaking, on the success that has attended their efforts; for already in nearly every department of natural history are there specimens to guide and illustrate the researches of the naturalist." To aid in completing this museum, Mr. Masters formed an herbarium of specimens from his nursery, which were duly arranged in their natural orders and named for reference. It seems scarcely possible that three-quarters of a century have elapsed since the publication of this work when we read the introduction, which might well have been written for a modern book. The author remarks: "The study of natural history has, of late years, assumed a rank and importance which, from its scope and tendency, it ought ever to have held; for can we conceive an education more eminently defective than that which does not include a knowledge of those objects in the animal and vegetable world by which we are surrounded, and of which we are essentially a part in the great chain of animated beings?" It is quite refreshing to read such thoughtful words in a catalogue of plants, for there is an unfortunate tendency to lose sight of the principles which should underlie the true pleasures of horticulture. The *Hortus Duroverni* contains a most remarkable list of plants, and as the considerable area of 30 acres was devoted to them, it can be imagined what an interesting collection had been formed. The total number of genera enumerated is 736, and the number of species and varieties must exceed 10,000. In the first division, viz., that devoted to hardy perennials and bulbs, 299 genera are included, and some of these comprise surprising collections of varieties, for instance, of *Ranunculus asiaticus*, which was at that time one of the popular flowers; no fewer than 226 forms are named and the colours stated. But the most astonishing of all are the Tulips, of which the collection was a particularly rich one, comprising 219 Bizarres, 188 Roses, 254 Byblœmens, 25 doubles, and 40 early varieties, or a total of 726. Dahlias came next in point of numbers with 159, which are grouped under singles (20), doubles (114), Irish Globe and Anemone flowered (25). Of double Anemone coronaria no fewer than 100 varieties are named, a large proportion being of French origin, judging from the names. Under Dianthus, besides several species, 50 varieties of garden Pinks are given, 67 varieties of Carnations, and 19 of Picotees. Amongst the former is one bearing the enticing title of "Strawberries and Cream." Hyacinths are classed as double rose or pink, double yellow, double blue, double white, and singles, the total being 78 varieties. Of *Chrysanthemum sinense* 36 varieties are named, which included most of the best of those then known. At the present time many nurserymen would be well satisfied if they could confine their collections to the number stated above. Hardy trees and shrubs representing 173 genera formed another section of the *Hortus*, and the collection appears to have been a fine one for that period, being especially rich in deciduous trees. Elms received a good deal of attention from Mr. Masters, and he raised several seedlings from *Ulmus campestris*, which were fully described by Loudon. One of these, *U. campestris*, var. *viminalis*, is represented in many gardens at the present time by fine specimens. Of *Cratægus* 24 species and varieties were included; of *Ilex*, 22; *Pyrus*, 18; *Quercus*, 18; *Rhododendron*, 28; *Azalea*, 56; *Fraxinus*, 18; and *Salix*, 41. Roses are placed in this list, 15 species and 284 varieties being named. It is interesting to note

that of *Pinus* only seven forms are listed, and of *Abies* five. Greenhouse and hothouse plants comprise 386 genera, but only in a few instances are the numbers of species and varieties large. Thus, of *Camellia* 55 forms are named, mostly varieties of *C. japonica*; of *Erica* 88 species and varieties are given; of *Mesembryanthemum* 35; and in all these cases it would be difficult to find a British nursery at the present time with anything like these numbers. Twenty-five species of *Pelargonium* are mentioned, while the varieties reach a total of 175. Amongst Orchids only two species are named, viz., *Bletia Tankervilleæ* and *Cymbidium ensifolium*, while the *Palms* are restricted to three—*Chamaetrops humilis*, *Phoenix dactylifera*, and *Rhapis flabelliformis*. Hardy fruits received a good deal of attention at Canterbury, and the collection was a thoroughly representative one. Apples, for instance, comprised 200 varieties, Pears 128, Gooseberries 62, Plums 42, Cherries 28, Peaches 26, Nectarines 19, Strawberries 26, Apricots 11, and Grapes 38. Under the list of *Pinus* is a note to this effect: "We observe in most gardens the Orleans, on account of the abundance of its produce, superseding much finer and more desirable kinds, such as Coe's Golden Drop, Guimaraen, La Délicieuse, &c." The second of these I have failed to identify, the last is known as Cooper's Large, and the French name has been corrupted in some districts to "Lady Lucy." Guimaraen is described as yellowish-green, long, of medium size, of rich, sugary flavour, and ripe in August and September. Is it known in any of the Kentish gardens or nurseries now? It should be added that the whole of the botanical names of plants are accented, the translation of the name is given in most cases, together with the native country, natural order, colour of the flowers, height, and time of flowering, while in the fruits the shape, colour, quality, and season are indicated. It makes one wish that modern catalogues could be issued in a similar form. R. Lewis Castle. [This little book is rarely met with now; the copy I purchased in the old Holywell Street, Strand, about 1890, was the only one I ever saw on sale, though I was then familiar with it, as the work was included in Dr. Robert Hogg's library at the Journal of Horticulture Office. When I sent the MS. (now printed) to the late Dr. M. T. Masters, he acknowledged it in these words: "Many thanks, I was born in that *Hortus*." The last communication I had from him referred to these notes, and requested he might be allowed to retain the MS. "a little longer." R. L. C.]

VERBENA MONTANA.—This plant is a hardy floriferous species, with pale pink blooms from the Rocky Mountains, and it was brought to this country in 1873. This journal, in noting the introduction of this species, stated (1873, p. 575), "Crosses made between this new species and *V. venosa* would in all probability produce an interesting progeny, and if it were also used by raisers of seedling Verbenas, for the purpose of restoring something of the lost constitution which has resulted from inter-breeding, the Verbenas might eventually become more popular, or at least better fitted for outdoor purposes in our gardens." The *Verbena* has, in fact, become more popular as an outdoor and pot plant since that date, but I am not aware of any recent raiser who has followed the advice then given. The Verbenas of the present day are even more beautiful, and quite as floriferous as any that existed in the 50's and 60's. I would ask what has become of *Verbena tenera* var. *Mahoneti*, a very dwarf plant, with pretty striped flowers. If it exists, it might be used with some taller-growing modern varieties for the production of fancy-coloured plants for basket work and filling small beds, similarly to the brilliant scarlet-flowered *V. melindres*, which, it is to be feared, is lost to gardens. F. M.

RONDELETIA STRIGOSA.—A specimen of this uncommon species of *Rondeletia*, growing in a suspended basket in the intermediate portion of the "T" range at Kew, well shows its suitability for this mode of treatment. It forms a freely-branched little bush, whose slender arching shoots are clothed with neat foliage of a deep shining green, while the flowers, which very much suggest those of a *Bouvardia*, are bright crimson with a yellow centre, and about one-third of an inch in diameter across the expanded mouth. They are borne in neat,

rounded, terminal clusters. *R. strigosa* cannot be obtained from the nurseries, but when introduced from Guatemala under the name of *Bouvardia Roezli* it was grown in Messrs. Henderson's nursery at St. John's Wood, and one hybrid at least between this species and a garden form of *Bouvardia* was put into commerce. The name of this particular variety was "Unique," the flowers being violet-carmine with a white tube. I have not seen it for some years, and in all probability it has now dropped out of cultivation. As such a cross has been effected, this species suggests various possibilities to the hybridist. W.

FLOWERING WALL-PLANTS FOR NORWAY.

A lady who has a house in Norway on a small fjord running out of the Sogne Fjord, would like to plant some flowering creepers on the sunny side of her house, facing to the south. On that side of the house facing to the fjord, which has a N.E. aspect, she has Hops and Virginian Creepers. Annuals are not satisfactory there, as the snow lies so late, and the summer is too short for them to make growth and flower. Her Sweet Peas this year, on August 15, were not one foot above the ground. The Norwegian spring and summer are very brief, but for a short period the sun's rays are very powerful, and the duration of sunlight longer than ours in England. Our common wild flowers grow plentifully in that district, and both Harebells (*Campanula*) and wild "dog" Roses are much deeper in colour and larger in size than any I have seen in England. Hemp Nettle (*Cannabis*), Yarrow (*Achillea*), Asphodel (*Asphodelus*), St. John's Wort (*Hypericum*), Meadowsweet (*Spiræa*), Grass of Parnassus (*Parnassia*), Kingcups (*Ranunculus*), Sundew (*Drosera*), Butterwort (*Pinguicula*), all flourish, and this year we found *Linnea borealis*. Two glaciers come down into two valleys at the head of the fjord some six miles inland, but the aspect intended for the creepers is away from the glacier breezes. L. J. F.

QUESTION NIGHT.—I was much interested in the note in last week's issue, p. 152, by A. D., upon the above subject, wherein it is proposed to set apart one night during the winter session as "Question Night," at the Kingston Gardeners' Mutual Improvement Society's meetings. The Birmingham and Midland Counties Gardeners' Mutual Improvement Society introduced such an evening three years ago, and one member presented the society with a polished mahogany question box—having a fair-sized slit in the top. This box is placed in a convenient position every evening, to enable members to put a written question in at any time. On the night set apart for the purpose, the box is unlocked by the chairman, who reads each slip out separately and invites any member to reply—it generally falls to one of the officers to start the ball rolling, when discussion soon follows from various members. Each question is dealt with separately and an excellent evening is the result. W. Spinks, *The Nurseries, Solihull*.

THE POISONOUS PROPERTIES OF PRIMULA OBCONICA.—It might interest some readers to know that during the present season we have had very unpleasant experiences of the effects of the leaves of *Primula obconica* upon the skin of those persons who have had reason to handle them. Early in spring my foreman suffered greatly for many days, and was unable to sleep through the irritating effects caused by handling several plants at the potting bench; in his case the arms between the wrist and elbow were badly swollen, and of a crimson colour. Some nine or ten days ago, and following the clearing of some 30 to 40 plants from the conservatory, one of my journeymen came to me in a terrible state, his hands and wrists, and the greater part of his face had broken out in sores (each sore appeared as if a water cell), and he had suffered extreme nasal catarrh for 24 hours. I at once sent him to a doctor, who pronounced him badly poisoned, and now, a week later, he is still incapacitated. Our stock of this *Primula* has been consigned to the fire heap. Geo. Burnes, *Shandish Gardens, Elm Hill, Hemsted*.

TRADE NOTICE.

Mr. J. H. TAYLOR will manage the Nurseries, Bexley Heath, Kent, for Mr. G. S. EVANS, as formerly for Mr. A. F. DUTTON.

SOCIETIES.

ROYAL HORTICULTURAL
Scientific Committee.

AUGUST 20.—*Present*: E. A. Bowles, M.A., F.L.S., F.Z.S. (in the chair); Dr. M. C. Cooke; Messrs. J. T. Bennett-Poe, H. T. Güssow, E. M. Holmes, G. Gordon, and F. J. Chittenden (hon. sec.).

Tomato disease caused by Septoria lycopersici.—Mr. Gussow showed specimens of Tomato leaves from Gloucestershire having brown spots. These quickly cover the whole leaf, which dies in the course of a very few days after the infection commences. The disease does not seem to have been recorded in this country hitherto, although it was found in Argentine as long ago as 1881. There seems no remedy after the plants are once attacked, since the progress of the trouble is so rapid, but plants attacked should be burned immediately.

Neobenthamia gracilis, Rolfe (see fig. 72).—A spike of this very pretty Orchid from Zanzibar was shown by Mr. BENNETT-POE. It was awarded a botanical certificate in 1900, and is described by Mr. Rolfe in *Gardeners' Chronicle*, 1891 (ii. ns.), p. 272, and figured in *Bot. Mag.* (1900), t. 7221.

no doubt of its being Berkeley's species; it agrees so well with the description and the figure. The spores are so profuse that it would be dangerous as a pest were it to obtain a foothold."

Plum Anthracnose.—Dr. COOKE also said: "Some Plums have recently been submitted to me which were evidently suffering from the attacks of a new pest. The surface of the nearly-ripe fruit exhibited one or two concave depressions, about a quarter of an inch in diameter, and of a pale tan colour, contrasting strongly with the deep purple of the fruit. These depressions were lined with the minute receptacles of a species of Anthracnose, as the Americans term this form of disease, produced by species of the genus *Gloeosporium*. In this instance the spores were abundant in the depressions, hyaline, but comparatively very small for the genus, not more than 10 to 12mm. long, and about one-fourth as broad. Hitherto I have found no described species to correspond with the present, so that for the purpose of identification I have called it *Gloeosporium prunorum*." (See *Gardeners' Chronicle*, August 24, 1907, p. 160.) Dr. COOKE showed sketches and specimens of this disease.

Ceropegia hybrida.—Mr. E. A. BOWLES showed a flowering specimen of this hybrid, which was described and figured in the *Gardeners' Chronicle*

this was another case of graft hybridisation somewhat similar to that seen in *Cytisus Adami* and in *Cratægo-mespilus*.

Effect of lightning on Elm.—Mr. C. H. HOOPER sent specimens illustrating the effect of lightning on an Elm tree which had been struck during a storm on August 17. "The tree, which is about 100 yards from a tall church tower, was struck about 40 feet from the ground, and shows no damage till within 6 feet of the ground, where on one side the bark with the wood has been gouged out, and on the other side the bark only has been cut and stripped as if with a knife." The extent of the damage caused to trees in this manner seems to depend on the amount of water in the wood.

Effect of light on direction of growth.—Mr. SUTTON, through Mr. BENNETT-POE, called attention to a letter from Mr. J. B. WALLIS in the *Times*, who described a curious growth in an Elder in a thicket near Wirksworth, Derbyshire. He writes: "So great was the tangle of brushwood that the branches of this tree had been forced to bend over and grow towards the ground, after the manner of the Weeping Willow. To grow normally the leaves would have appeared with their under sides uppermost, but, to prevent this, the stalk had grown spirally, making a complete revolution of the axis, and thus bringing the leaf right way up, the whole presenting a peculiar appearance. Such is the power of sunlight and the faculty of adaptation to environment."

Twin Apples.—Mr. G. F. HOOPER, of Croft Fruit Farm, Pershore, sent an excellent specimen of this not very uncommon phenomenon. In the present instance the two fruits were on quite distinct stalks, and the fruits had become coherent in the upper parts.

ROYAL HORTICULTURAL OF
ABERDEEN.

AUGUST 22, 23, & 24.—This society held its annual show on the above dates in the Duthie Public Park, Aberdeen. The weather on the opening and second days was unfavourable, but on Saturday the weather was fine, and many persons attended.

There were upwards of 1,600 entries.

POT PLANTS.

In the class for a display of stove or greenhouse plants, arranged for effect, in spaces measuring 8 feet by 6 feet, Mr. GRIGOR, Fairfield Gardens, won the 1st prize. Mr. GRIGOR had also the best Ferns, his specimens of *Nephrolepis Whitmanii* and *Adiantum Farleyense* were exceptionally well grown.

Mr. GILLESPIE, Northfield Place, Aberdeen, showed the best Fuchsias. In a class for six plants suitable for the decoration of a dining table, and in pots not exceeding 6 inches in diameter, the exhibits shown by Mr. John Petrie, Gardener to Sir THOMAS BURNETT, Bart., of Leys, Crathes Castle, well deserved the 1st and 2nd prizes awarded to them. Mr. MACKIE, Morken, carried off the premier prize for Begonias with exceedingly fine plants.

Orchids were not numerous shown, but those exhibited by Mr. A. DUNCAN, Rubislaw Den House Gardens, Aberdeen, were of excellent quality, and deserved the 1st prize awarded them. Mr. A. Douglas, gardener to THOMAS OGILVIE, Esq., Kepplestone, Aberdeen, had finely-grown *Dracænas* and *Crotons*, which gained for him the 1st prize. *Gloxinias* made an exceedingly fine show, the specimens shown by Mr. ALEXANDER DUNCAN, Rubislaw Den House, were the best. *Petunias* were few in entries, but were decidedly good in quality. Mr. J. W. BRECHIN, Gardener, Ardoe, Belhelvie, Aberdeenshire, had the best of these plants.

CUT FLOWERS.

The marquee devoted to cut flowers proved a delightful attraction to the many visitors, the principal feature being the splendid display of Roses and Cactus Dahlias. Mr. ALEXANDER HARPER, Rubislaw Park Gardens, Aberdeen, and Mr. WILLIAM COUTTS, Ellon, Aberdeenshire, were successful in these classes. Mr. HARPER easily won the premier prize with capital specimens of Tea and Noisette Roses. Mr. ALEXANDER BREBNER, Dalhelvie Gardens, Aberdeenshire, exhibited Cactus Dahlias, which evoked general admiration, and worthily gained for him the premier place.



FIG. 72.—NEOBENTHAMIA GRACILIS, SHOWING HABIT AND FLORAL DETAILS.

Aphides on Palm roots.—Mr. GORDON showed portions of the root of *Kentia Forsteriana* upon which were large numbers of a species of woolly aphid. The plant from which the specimen had been taken did not appear to have suffered to any extent from the attacks of the insects. They were referred to Mr. SAUNDERS for further examination.

Reappearance of a Peach pest.—Dr. M. C. COOKE showed figures of a pest of Peaches, which "the late Rev. M. J. Berkeley recorded and figured in *Gardeners' Chronicle* for 1864, p. 938. This mould Berkeley discovered on ripe Peaches in Wales, where he found it to be a pest producing a great profusion of large spores. He named the fungus *Macrosporium rhabdiferum*, but, as the spores were not muriform, it could not be *macrosporium*. In the *Handbook*, I called it *Helminthosporium rhabdiferum*, but now that I have seen it I find it is not *Helminthosporium*. In the interim it appears not to have been met with anywhere, until last week it turned up on Peaches again—after everyone had given it up as a mystery, and it was excluded from all consideration as a pest. There can be

for December, 1906, p. 383. It was raised from seed of *C. Sandersonii*, which species had been crossed with pollen of *C. similis*. Mr. BOWLES also showed a flower of *C. Sandersonii* for comparison.

Fruit of Pyrus Malus floribunda.—Dr. BONAVIA sent some large fruits of this Japanese variety of Apple, which he had not before seen producing seed. Several members of the committee remarked on the large size of the fruit produced by this variety this year.

Variation in Beech foliage.—Mr. A. HOSKING sent specimens of the foliage of the fern-leaved Beech (*Fagus sylvatica asplenifolia*), and branches from near the top of the same tree bearing leaves intermediate between the fern-leaved type and the normal type, which he sent for comparison. The specimens were from the garden of W. FITZHERBERT-BROCKHOLES, Esq., of Cloughton Hall, Preston. Mr. HOSKING had since noticed the same variation on a Beech in Avenham Park, Preston. The branches bearing the intermediate foliage were intermixed with the ordinary branches, and did not arise from the base of the tree. Mr. HOSKING suggested that

The displays of hardy flowers were exceedingly fine. Mr. JOHN PETRIE, Crathes Castle, was successful in the principal class for such flowers. In the class for a collection of 20 varieties of cut flowers and fine foliage bedding plants, including annuals best adapted for flower garden decoration, the collection staged by Mr. A. GRIGOR, Fairfield, worthily won the premier honour.

The cool season has been exceedingly favourable to the growth of Pansies, and a good display was seen in the classes for these flowers. Mr. GILLESPIE, Aberdeen, took the chief honour with an exceptionally fine exhibit, including both show and fancy varieties. The decorative classes proved most interesting.

FRUIT AND VEGETABLES.

There was a considerable decrease in the number of entries in these classes compared with previous years, and the quality of the fruit, with the exception of the hardy varieties, was not equal to the standard usually seen at Aberdeen. There was only one entry in a class for a collection of eight dishes of fruits (Pines excluded). This was shown by Mr. DOUGLAS, and gained for him the Silver Cup presented to the society by his employer, Mr. Ogilvie, of Kepplestone.

For the best collection of six dishes of hardy fruits, Mr. JOHN KINNAIRD, Hazelhead, Aberdeen, won easily. Grapes were very poorly shown, and the berries were lacking in finish. Mr. W. S. MACKIE, Morken, led in the class for Melons, while the best Peaches and Nectarines were shown by Mr. HOWE, Fintray House.

Vegetables were exceedingly fine. The best collection of vegetables in 10 varieties were exhibited by Mr. DOUGLAS, Kepplestone. Mr. FRANK KINNAIRD, Broomhill, Aberdeen, won in the class for a collection of vegetables open to market gardeners only, with an excellent entry.

The exhibits of Potatoes were an outstanding feature, as is invariably the case at Aberdeen, the leading places being taken by Mr. FERGUSON, Linton Gardens; Mr. DOUGLAS, Kepplestone; Mr. WILLIAM COUTTS, Ellon; and Mr. WILLIAM LAWSON, Oakbank School.

Splendid produce was shown in the classes reserved for amateurs and working men.

NON-COMPETITIVE DISPLAYS.

Messrs. COCKER & SONS, Aberdeen, exhibited a collection of Roses of splendid quality.

Mr. M. H. SINCLAIR, Union Street, Aberdeen, had an exceedingly fine display of Gladoli, American Tree and "Malmaison" Carnations, sprays of hardy foliage (all named), Sweet Peas and other flowers.

Messrs. WILLIAM SMITH & SON, Aberdeen, made a fine display of plants in pots, hardy flowers, and floral designs.

Mr. JAMES ROBERTSON, Hadden Street, Aberdeen, had a display of Gladoli, hardy flowers, and Sweet Peas.

Mr. P. McHARDY, Aberdeen, showed hardy flowers, Sweet Peas, &c.

SOCIETY OF AMERICAN FLORISTS.

AUGUST 20.—The "Society of American Florists and Ornamental Horticulturists" held their annual convention at Philadelphia, Pa. The proceedings were opened on the above date, and continued for five days. We have been favoured with a copy of the speech delivered by the President, Mr. WILLIAM J. STEWART, of Boston, and from which we make the following extracts:—

THE MISSION OF THE SOCIETY.

To aid the horticulturist through the influence and power of concentration, by the gathering together, moulding and assimilating of the concrete wisdom of the many, and to bring the profession to a lively sense of their duties and privileges and a better realisation of what is possible through the medium of a well-supported central organisation is the task of this society. Its aim and its purpose have ever been to stimulate emulation, to broaden the channels of business, to promote the fraternal spirit, to help the gardener and florist in making for himself an honoured position in the commonwealth, and to inspire the profession

with a more correct understanding and better appreciation of the nobility of their calling, which, as Downing tells us, "is intrinsically the parent and superior of them all," because agriculture is the basis of all wealth and horticulture is the refined essence of agriculture.

GARDEN-HUNGER AND THE HORTICULTURIST'S OPPORTUNITY.

Modern suburban transportation facilities have given a tremendous impetus to the rural home idea. It is to the man skilled in horticulture that the home-maker will turn for advice, assistance, and material needed, and for those who grasp the opportunity in the right spirit there will be found abundant scope and full recompense for cultural knowledge and artistic talent. Nothing comparable to the present demand for hardy garden material has ever been experienced in this country, and no horticultural enterprise intelligently and diligently conducted can fail of success if existing conditions are understood and provided for. Tender material, also, will get its full share of the prosperity if used with better discretion as to its adaptations and limitations. For the ambitious, earnest young man, blessed with an artistic temperament, no departure of horticulture offers better emoluments or higher honour than that of outdoor gardening in all its branches. Within the scope of our vision to-day the field seems practically unlimited and the young generation may safely go into training for large responsibilities—every one will be needed. Under pressure of exigencies prevailing in the past the gardener has in too many instances been acquiring a one-sided experience, and some of our most talented indoor growers find themselves badly handicapped through deficient education in the fundamental operations of general gardening. The horticulturist who will make his mark in the future will not have these limitations, but will combine a thorough equipment for outdoor planting, grading, management and executive ability, with a fine knowledge of indoor operations and proficiency in the production of flowers and fruits under glass that will stand the test of comparison with the products of the specialist. Several of the agricultural colleges are doing good work, and turning out trained young men from whom we may expect much.

ROOM FOR IMPROVEMENT.

Too many greenhouses are devoted to crops for which neither the houses nor their owners are competent. We see acres of nursery space filled with antiquated stock; well-grown flowers sacrificed through careless handling or through inefficiency in the sales department; the once-prosperous flower-shipping business prostrated by short-sighted methods; the trade subjected to criticism because of the trumpeting of undeserving novelties. Our exhibitions are crude in method, faulty in manner of making awards or interesting the public. In every branch of activity there is room for better system. The arrangement of flowers, the planting of garden beds or the larger operations of beautifying an estate or creating a landscape picture, in many of which, as we see them from day to day, the qualities of originality and artistic intelligence in form and colour harmony are conspicuously lacking, show conclusively the need for study and self-education in artistic taste before we are properly fitted to instruct the public. It is the province of the florists' club to seek out and apply the remedies for all these deficiencies, and it becomes the duty of the craftsman in justice to himself and his fellows to uphold in every possible day his local organisation, and do his share towards the general advancement which is sure to follow the fraternising of congenial spirits whose material interests are identical.

OUR RELATIONS WITH OTHER ORGANISATIONS.

There is nothing more to be desired to place this organisation in a position of greatest usefulness than some system of direct affiliation with existing or prospective special and local organisations. Far from regarding these societies as a possible menace I look upon their multiplication as distinctly to our advantage. The field is practically limitless, and we can well afford to nourish any and all well-meant efforts to build up horticulture in any of its branches. There is an infinity of specialised detail and local work which the smaller and more compact bodies can care for with an

efficiency far beyond the reach of a society constituted as this is. Let them do it if they will, and wherever and whenever the time comes that they find their burden heavy and the road rough, let us put our big shoulder to the wheel and help them. On the contrary there are movements where a successful consummation is only possible under the capacious mantle of a large national organisation. Events of the past year have indicated to us how at any moment we may be called upon to champion the cause of some branch of the trade where strength of numbers and national incorporation become elements of great strength, and where the existence of a powerful representative body serves as a restraint and defence against corporate plunder. I believe we should keep working on this problem of closer relations until some feasible plan of permanent affiliation and intelligent co-operation has been evolved and a system of specialised work established through these auxiliary bodies.

PLANT REGISTRATION.

A well-regulated system of plant nomenclature is needed. It would be an element of great stability if all registration of varietal names could be recorded in one universally recognised bureau. Whether this should be done direct by the owner or first pass the scrutiny of a specialised society, where such exists, is of little consequence, provided it finally comes into the custody of a central authority having the power to follow up infringement and extend the fullest protection within the law to the originator or owner. This central authority, I believe, should be the Society of American Florists and Ornamental Horticulturists.

TWO IMPORTANT DUTIES OF THE SOCIETY.

The time seems now ripe for us to insist that horticulture be made a regular course in our public school system. There can be no question of the wisdom of this society's taking an advanced position on this matter and fostering liberally all movements for the dissemination of garden knowledge through this means. Every argument on physical, mental and moral grounds is on our side.

As a society we should lend aid and encouragement to any investigation or experimentation for the purpose of stimulating the production of any horticultural material for which we have hitherto been obliged to depend upon foreign sources of supply. "Made in America" is an inscription too seldom seen on horticultural goods. How can this organisation best assist to that end? In the case of those goods which we must import, there is room for a better system and improved facilities in the appraisers' department, and I hope our legislative committee will give this question the attention it deserves.

PARCELS POST NEEDED.

The project of a parcels post is a reform worthy of our hearty support. A cheaper and more reliable means of distribution for packages of limited size and weight, such as is enjoyed in most European countries, would greatly benefit the plant and bulb trade, and provide the means for supplying the public at small cost with plants of a size that might be seen without the aid of a microscope and might be nurtured into large specimens without the use of an incubator. Were it not for the express companies a parcels post would have been a reality long ago—so we are told. The express companies and the S.A.F. have been making one another's acquaintance of late and find they don't think alike on some things.

STATE VICE-PRESIDENTS; OUT-DOOR EXHIBITIONS.

I am satisfied that the present system of selecting State vice-presidents to represent this society sectionally might be improved upon, and would suggest that you consider the adoption of some system whereby, in those localities where any organisation exists, we might through mutual arrangement confer upon the presiding officer the honour of representing the S.A.F. in his territory during his term of office.

It is much to be regretted that the Executive Board found conditions so unpropitious for an outdoor exhibition of planted material in connection with this convention that the project had to be abandoned. It was hoped by many

that the humble beginning made in Dayton might be followed up, and that in time an outdoor exhibit might be made a regular feature of our conventions, but in a large city the difficulties seem almost insurmountable. Wherever circumstances permit I believe it will be good policy to provide at least for a planting of such novelties as cannot be properly presented in an indoor exhibition.

NATIONAL FLOWER SHOW.

As the National Flower Show project will be reported on at the proper time by the very competent committee of fifty under the chairmanship of my predecessor I will not take your time now with any reference to it other than to submit that it would be a grave mistake to make any change from the time-honoured date for holding our annual convention. If it is thought wise to have a meeting at Chicago at the time of the exhibition, let it be a special meeting called as provided for in the by-laws. The proposition to merely meet formally in August so as to comply with the constitutional requirements, and then adjourn over until the time set for the flower show, would, I firmly believe, very seriously affect the prosperity of the society.

THE SOCIETY'S GOOD RECORD.

The birth of the Society of American Florists was the outcome of a conviction on the part of its promoters that the horticultural interests of America were ready to get together for mutual advantage and the uplifting of their art. The young society found the commercial florist, as a rule, isolated and provincial because of the lack of opportunity for any but the most limited intercourse and interchange of opinion and experience. Not one society, club or periodical devoted primarily to the interests of floriculture existed on this continent. The best test of the wisdom of the founding of any institution is what it has been able to accomplish. Do you not think that the seed sown 23 years ago has borne good fruit? The yield might have been increased many fold had everyone in the profession who needed just this help taken advantage of it; still, it is not too much to say that the S.A.F. has been the underlying force which has in this brief period placed American floriculture on an eminence where it commands the respect of the world, and that the splendid confidence of its founders in the future magnitude of their profession has been well justified. The spirit of progress which prompted them to break the shackles of past isolation and secretiveness and throw wide open the doors for a general intellectual and material advancement is still our best asset. We must allow free scope to the mighty reserve forces of American horticulture and be constantly on the alert to see and act upon every opening for strengthening our hold upon the heart-strings of the profession.

WHAT CONVENTIONS ARE GOOD FOR.

The society is to be congratulated on the magnificent attendance at this meeting. Conventions are always an incentive and encouragement. They give zest to work, feed the intellect, enrich our literature. They are a unifying force, establishing and cementing friendships and bringing into advantageous contact those who, although widely separated, are actuated by a common purpose in life. I pity the man who sees nothing to interest him here, and finds no inspiration in such gatherings, no strength to help him surmount the daily recurring difficulties which are our common lot, no advantage in the opportunity to inspect this great industrial exhibition. Little does he realise how great is his loss.

BRITISH GARDENERS' ASSOCIATION.

At the last meeting of this association, held at the R.H.S. Hall, Westminster, Mr. R. L. Castle in the chair, 17 new members were elected, bringing the total up to 1,095. Arrangements were made for the preparation of a certificate and diploma, after careful consideration. A request having been received from Newport, Monmouthshire, to hold a meeting, the secretary was appointed delegate to deliver an address on September 18. A conference on "Examinations for Gardeners" will take place at the Royal Botanic Society's Gardens, Regent's Park, on September 12, at 6 o'clock. J. W.

ANSWERS TO CORRESPONDENTS.

AMATEURS AT FLOWER SHOWS: *Correspondent.* The term "amateur" is sometimes used to describe an exhibitor who cultivates his own produce without the aid of a trained gardener, but in other cases it is used in a broader sense to distinguish a private grower from a nurseryman, even though the former employs a professional gardener. No person who sells plants can be regarded as an amateur, nor any person in the employ of a nurseryman. If the schedule be made to read "An amateur gardener who employs no professional help," or "an amateur owner," the distinctions will be sufficiently clear.

AQUATIC WEEDS: *W. P. B.* An article dealing with the best methods of combating aquatic weeds was given in the weekly Calendar on "Public Parks and Gardens" in the issue for May 25, 1907.

BLACK PANSY: *F. C. R.* There are several varieties of deep purple, almost black, Pansies already in commerce.

BOOK OF GARDEN RECEIPTS: *H. & G.* *The Horticulturist's Rule Book*, by L. H. Bailey, the Garden Publishing Company, Ltd., New York, U.S.A.

CARNATIONS: *G. C.* There is evidence of the puncture of small insects followed by an irruption of bacteria. The cultivation appears correct.



FIG. 73.—THE DEATH'S HEAD HAWK MOTH (ACHERONTIA ATROPOS).

CATERPILLAR: *W. S.* The caterpillar is the larva of the Death's Head Moth (*Acherontia atropos*) (see fig. 73). It feeds frequently on Potato plants.

CATTLEYA LEAVES DAMAGED: *Derby.* The plants have been attacked by thrips, which have probably resulted from cultivating the specimens in too warm an atmosphere with insufficient ventilation. Cut off the worst leaves and sponge the plants occasionally with a diluted insecticide. Admit more air to the structure during warm weather.

CORRECTION.—On p. 160 of the last issue *Macrosporium rhabdiferum* was inadvertently printed *M. rhalidiferum*.

CUCUMBER LEAVES: *A. B.* The leaves are spotted by *Oidium Balsami*, and this is apparently caused by the presence of too much moisture. The Begonia leaves are not affected by any disease.

CUCUMBERS: *C. L.* The fruit appears as if starved for lack of proper and sufficient nutriment. There is no disease present.

FERN: *D. E.* Not having arranged the questions to be submitted at the examination, we cannot attempt to explain exactly the views the examiners may have regarding their interpretation. As a rule, it is best in such cases for students to observe the literal reading of the questions.

GRAPES: *T. W. S.* There is no disease on the berries and no evidence in the Grapes themselves of the cause of the browning, which must be due to some local condition.

MANURES FOR SPECIAL CROPS: *Amateur.* Sweet Peas may be watered very occasionally with a solution containing a quarter of an ounce each of kainit and superphosphate of lime and an eighth of an ounce each of nitrate of soda and

iron sulphate, to two gallons of water. You should select plump corms of Gladioli for planting in window-boxes, and plant them in a rich, sandy loam. Great attention must be given to the watering of all plants in window-boxes.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers.*

FRUITS: *W. G. W.* The Nectarine Peach. The Grape resembles Canon Hall Muscat.—*J. Service* and others. We cannot undertake to name Peaches with any degree of certainty unless particulars are sent as to whether the tree bears large or small flowers and if the flowers are richly coloured or pale. It is also necessary to send us leaves for the examination of the glands.

PLANTS: *F. B.* 1 & 2, varieties of *Fuchsia magellanica*; 3, *Spiraea japonica*; 4, *Spiraea japonica* bullata; 5, *Cornus macrophylla*; 6, *C. sanguinea*.—*A. C. F.* *Juniperus pseudo-Sabina* and *Cupressus thuyoides*.—*G. E. W.* *Astrantia major*.—*J. P.* 1, *Clematis viticella*; 2, *Sempervivum tortuosum variegatum*; 3, *Codiaeum (Croton) variegatum elegantissimum*.—*F. T.* *Hypericum perforatum*.

ODONTOGLOSSUM ROSSII: *D. A. L.* The variety you send is distinct from the species and very attractive, although not so showy as the best richly-coloured varieties.

PLUM TREE: *W. C.* There is no local disease in the leaves to cause the spotting and decaying. No fungus appears until the spots are quite dead, and then a small fungus—a species of *Phoma*—occurs on the spots, but does not cause them. Is it certain that the roots of the trees are in a proper condition?

PRONUNCIATION OF PLANT NAMES: *T. J.* If you have a copy of Nicholson's *Dictionary of Gardening* you will find a pronouncing dictionary in the supplement to that work.

SEEDLING CARNATIONS: *H. F. G.* As far as the variety can be judged from single flowers only they appear to possess qualities that should make them valuable garden plants. But in order to ascertain whether they are better than existing varieties it would be necessary to compare the flowers, and to have a knowledge of the habit of growth possessed by your plants. The blooms are certainly attractive, and they have non-splitting calyces. Two of the best are number 2 of rosy-salmon colour, and number 4 rich maroon-crimson.

SWEET PEA: *W. H.* There is no fungus disease present and nothing to account for the failure. It must be due to some local cause.

VARIETIES OF NECTARINE: *G. T. B.* Humboldt is a good Nectarine and may be forced satisfactorily, but it is not one of the earliest. Cardinal and River's Early ripen before all others, and they force well. Lord Napier may also be forced. Late fruiting varieties include Spencer, Darwin and Milton, which are all good sorts. Of early ripening Peaches, Hale's Early and Duchess of Cornwall may be recommended. These should be followed by Crimson Galande and Bellegarde, and later by Lady Palmerston, Sea Eagle, Golden Eagle, and Thomas Rivers.

COMMUNICATIONS RECEIVED.—A. W.—X. W.—E. W. & Sons—W. A. C.—D. D.—C. P. R.—J. G.—Cassell & Co.—C. T. D.—E. M. B.—A. K. B.—F. S.—F. J.—S. D. & Co.—G. W.—J. C.—C. S. P.—W. J. B.—E. H. J.—H. W.—W.—E. G. P.—A. D. W.—F. M.—H. S.—M. C. C.—T. S.—S. A.—S.—W. E.—W. E.—B.—C. H.—F. H.—A. J. C.—E. M.—G. W.—W. C.—A. E.—C.—W. & S.—B. S.—H. W.—F. E.—J.—K.—& Son—C. & Sons—J. H. C.—S. H. J.—S. B.—J. A. W.—W. H.—E. B.—A. M.—S. & Sons—H. H. Belgium—W. B. H.—Dr. Henry—R. L. C.



THE Gardeners' Chronicle

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HAMPTON COURT GARDENS.

[SEE FIGURES 74, 75, AND 76, ALSO SUPPLEMENTARY ILLUSTRATION.]

THE great charm of these public gardens is in the mingling of the older style with the more modern manner of flower-gardening. Probably no public garden has made the same advance in the matter of decorative gardening as that at Hampton Court, during the twelve years or thereabouts that Mr. J. A. Gardiner has filled the position of superintendent.

Not many years ago the quarter called the Wilderness was a very uninteresting part of the garden, with gravel walks winding among Laurels and other ordinary shrubs. At the present time its features are really more in conformity with wild nature than before, for it is planted with a representative collection of flowering and foliage shrubs, and in its centre, on the site of a former rubbish heap, has been constructed a rootery, and this is planted with Ferns, Alpine, and trailing plants. Tall Bamboos, pillars of Wichuraiana Roses, species of Rubus, Clematis, &c., are planted thereabouts. The stretch of water in this portion of the grounds, whose banks were formerly clad in the manner familiar on the backwaters of the Thames, is now beautified by gigantic Gunneras and similar foliage plants, a collection of Irises, and representatives of many other plants which thrive in marshy ground and have been planted at the sides of the water-

course. The surface of this water is ornamented by the fine foliage and the showy flowers of Water Lilies for which the gardens are noted.

The flower-border on the east front (see fig. 75) is about a quarter of a mile in length. Our illustration represents this border in its spring garb of Forget-me-nots, Tulips, Violas, Crocuses, &c., with Wistaria chinensis blooming on the wall. Now it is brilliant with Phloxes, Asters, Fuchsias, Violas, and a variety of flowering plants, both annual and perennial. The subjects are cleverly disposed in order that there shall be as little repetition as possible throughout the whole length of the border. The more important subjects are planted in groups, each kind being massed together separately. Chrysanthemums have been in flower since July, and they will continue to brighten this border until winter arrives; Bouvardia Humboldtii corymbiflora is bearing large masses of

ally good this season. The method adopted of planting several sets of plants of different heights is eminently suited for large flower-beds, as it admits of the use of a variety of subjects and at the same time adds to the scenic importance. A good example of these beds is seen in fig. 74. This has a very effective appearance and is composed of Violas, Yellow Broom, and Rhododendrons (Azaleas). Among the whole of the large number of these flower-beds not two are alike. One very pretty bed is furnished with grafted standard plants of Abutilon megapotamicum growing over the purple-flowered Salvia Horminum, and carpeted with variegated Holcus and dwarf Cockscombs, an edging of Echeveria glauca completing the whole. Another bed is planted with pyramid golden-leaved Fuchsias, white and green Abutilon Savitzii, pyramid Iresines, and Acalyphas with a base of variegated Veronicas. In several beds the double pink variety of



[Photograph by W. J. Vasey.]

FIG. 74.—A FLOWER-BED AT HAMPTON COURT.

its white, fragrant flowers; Calceolaria Burbidgei furnishes good, light yellow colour; patches of blue are formed by Salvia patens, and other species of Salvia furnish masses of brilliant scarlet-coloured flowers. Cuphea platycentra appears in bushes covered with tubular red flowers, Cassia corymbosa, Streptosolen Jamesonii, Plumbago capensis, various Abutilons, Agapanthus umbellatus, and other showy flowering plants commonly seen in greenhouses are in great beauty in this border. Asclepias curassavica, groups of the Tiger Lily (Lilium tigrinum); the white L. longiflorum, Lantana salvæfolia, Mina lobata, and countless showy perennials lend variety and are displayed to the best advantage.

The numerous flower-beds facing to the east front of the Palace have been exception-

tuberous rooting Begonia "Major Hope" forms a pleasing display, but in each bed a different variety of plant is used to form the taller subject, and variation in the edging is also insisted upon so that the beds will not be alike. When seen at a distance, the taller plants in the beds catch the eye first, and of these, the flowering Campanula pyramidalis, Cannas, Lilies, standard Heliotropes, tall Hydrangea paniculata, and Fuchsias are the more prominent subjects. A nearer view reveals the beauties of the second highest tier of plants in Verbena venosa, flowering Pelargoniums, Begonias, Celosias, &c., and a close inspection the more delicate effects of the varied carpetings and edgings of the beds. This style of bedding is specially suitable for large gardens.

Stately links with past ages are afforded by

the fine rows of aged Yews (some of which may be seen at the back of the flower-bed illustrated at fig. 74) and the shady avenue of Elms (fig. 76), all of which are said to have been planted at about the year 1690. The Elms are nearly all hollow, and they do not appear to have increased in size for many years, although they are carefully tended and everything possible done to keep them in health. The shoots are cut back every year, to be replaced by a similar scanty crop of leaf-bearing twigs in the following season, and this trimming helps to preserve their old-time appearance. Several of the trees, however, are in an enfeebled condition, although, like the proverbial creaking door, they may yet hang long on the hinges.

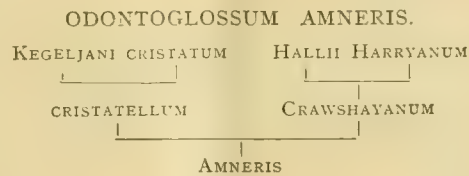
On the way to the vinery, which contains the historical vine—again well-cropped despite its great age—is encountered the Dutch or Tudor Garden shown in the supplementary illustration. This old-time feature is carefully retained in the original form, and as many old-fashioned flowers as possible are used for its embellishment. The centre rises in a grassy cone, from the middle of which a spreading jet of water falls into the basin below, which is planted with coloured varieties of Water Lilies. The walks are formed of irregularly-fitting paving-stones, and between these stones, Stonecrops, Cerastums, Spergula, and other low-growing plants appear, the mossy surface of the stones being in keeping with the general effect.

In the flower-beds are varieties of Dianthus, Violas, Marigolds, Candytufts, Antirrhinums, Verbenas, and many scented flowers both annual and perennial. At the back of the surrounding border rise the tall inflorescences of Sunflowers, brightly-coloured Phloxes, Larkspurs, Hollyhocks, Foxgloves, &c., and Sedums, Saxifragas, and many Alpine flowers appear in the irregularly-planted front. This pretty garden being enclosed forms a pleasant retreat, and, owing to the great variety of flowers used in its adornment, it is an interesting spot for all who delight in gardening.

From early spring until late winter the gardens at Hampton Court are bright with a display of flowers. Beginning with the *Iris reticulata* and *Chionodoxas* peeping through the snow, they are soon followed by myriads of Crocuses, Snowdrops, Tulips, and Daffodils that appear in the grassy slopes around the Wilderness, and on the borders of the long stretch of water. Probably these early spring flowers are more admired than the later brilliant show of summer-blooming plants. In autumn Michaelmas Daisies, Dahlias, perennial *Helianthus*, *Chrysanthemums*, and other flowering plants prolong the season of flowering well into winter, and when flowers are no longer possible outside, the beds are planted with low-growing, ornamental shrubs. A reserve of plants is kept ready in the nursery, so that any failures in the beds may be immediately replaced.

Mr. J. A. Gardiner, it will be remembered, has been appointed superintendent of the London Central Parks, in succession to the late Mr. Jordan, and Mr. A. Springs, who has long acted as foreman under Mr. Gardiner, is to succeed that gentleman in the management of the gardens at Hampton Court.

ORCHID NOTES AND GLEANINGS.



THE above interesting pedigree of plants bearing flowers, principally brown, overlaid upon a yellow ground colour, yields, as might be expected, another member of the great Harryanum family in which that potent species is at once recognisable, for though there are three other species concerned, it dominates in this resultant cross to about three-quarters of its appearance.

The sepals and petals are narrow, and, in form, like *O. Harryanum*. The colouring is of

coloured more or less, for in *O. cristatellum* the anther cap is dark brown.

The influence of the heavy blotch in the lip of *O. cristatellum* is strong; the ♀ parent of this cross is the ♂ parent of one of my crosses upon *O. crispum* with unblotched lip, and it produced *O. Urania*, all of which are heavily blotched on the lip. Such comparisons are interesting.

ODONTOGLOSSUM × AMONASRO.

O. × CRISTATELLUM ♀ × *O. × HARRYANUM* ♂

THE female parent of this plant is a far superior variety to the female parent of *O. Amneris*, being rounder, broader, brighter yellow in the ground-colour, and of deeper blotching. Its lip also is almost covered with deep brown, the spikes being long and arching, having carried as many as seventeen flowers; this will account for the differences in these two plants as they develop in the future.

This cross shows in an unmistakable manner



[Photograph by W. J. Vasey.]

FIG. 75.—PORTION OF THE FLOWER BORDER, UNDER WISTARIA-CLAD WALL, EXTENDING ALONG THE FRONT WALK AT HAMPTON COURT.

light chestnut-brown upon a greenish-yellow ground, which shows through in a few distinct bars, and at the base of the petals, is the usual slight purplish shade suffused into the brown. The petals stand forward at an angle of 45° to the plane of the flower.

The lip is the prominent feature, 1 × ¾-inch, bright sulphury-yellow, three parts of it being covered by a brown blotch that has a slight suffusion of lilac; extending along the side for half way are lines of similarly coloured pencilings.

The crest closely resembles that of *O. Harryanum*, the wings being a little thicker and more expanded.

The anther cap is yellow, as in *O. Harryanum*, but I have no doubt subsequent ones will be

the powerful influence of the smaller-flowered species *O. cristatum*, acting through the female parent, on the larger flower of *O. Harryanum*, and in this characteristic it is comparable to *O. Lindleyanum*, acting through *O. Wattianum* in *O. Ariadne* (see *Gardeners' Chronicle*, August 10, 1907, page 101).

In form and colour the flower is a very large edition of the female parent, excepting the lip, which combines the character of both parents, but *O. Harryanum* in the less degree.

The sepals and petals are covered, as to the outer half, with rich, blackish-brown, and the inner half is closely spotted on a greenish, bright yellow ground.

The lip is almost white, but shaded slightly with yellow here and there, resembling in

form that of luteo-purpureum having a broad base and slightly expanded blade, the front much rolled into the apiculus, which is very marked in the female parent. The keels and five pairs of large filaments form a very beautiful crest, which is yellow lined with brown.

The column is yellow, the stigma very large and round, the wings large and quite unlacerate, widely margined with brown. The anther cap is deep brown. *de B. Crawshay.*

THE BULB GARDEN.

LILIUM SULPHUREUM.

WHEN this *Lilium* was first introduced into this country there was divergence of opinion as to its proper name. In the *Gardeners' Chronicle*,

varies considerably; 5 feet to 6 feet is the average in the open, but when grown under glass it becomes much taller, and a plant in the greenhouse at Kew is 11 feet in height. One of the Kew specimens has developed 10 flowers, whilst others have eight and five. The tubular blooms are slightly pendant, 9 inches in length, and they measure 7 to 8 inches in diameter. The interior of the tube is yellow, and this fades towards the edge until it becomes a creamy-white; the exterior surface is tinged with purple, which is of a deeper shade in the flowers grown in the open. The blooms exhale a delightful odour.

Lilium sulphureum should be given a loamy soil rather than one containing peat. The stock may be easily increased from bulbils, which are freely produced in the axils of the leaves on the

NOTICES OF BOOKS.

ECONOMIC MYCOLOGY.*

IT is satisfactory that efforts are now made in this country to follow the example pursued for so many years in the United States of America of publishing from agricultural colleges and stations periodical reports on the various fungous diseases which, from time to time, attack cultivated plants. It has long been a source of regret that little or no effort has been made to disseminate trustworthy information on these diseases, with suggestions for their treatment.

The present report commences with that prevalent disease, the "brown rot" of Cherries, which also attacks Apples and other succulent fruits, giving a description of the disease, and methods by which it should be attacked.

This is followed by the "Cherry leaf scorch," a more recent disease, which has of late years seriously affected the Cherry orchards in some parts of Kent. This communication is illustrated by excellent plates, and is almost exhaustive of the subject.

Following upon this, the Apple Scab, or "black spot" comes in for notice. The disease appears to be unusually prevalent this year, and is evidently the cause of severe losses to Apple growers all over the country. Here, again, the information is of the most practical kind, well illustrated, and embodying many useful suggestions.

The "Crown gall of Lucerne" is one of the most modern of agricultural pests, and it is now brought to the notice of farmers, in many instances, for the first time.

The "European Gooseberry-mildew," with especial reference to its attacks on Red Currant, follows, and occupies the remainder of 25 out of the total of 58 pages.

From this point forwards the report is occupied by "The American Gooseberry-mildew in England, and the need for legislation." And here I regret to find that the reporter abandons his function of imparting information. From this point, therefore, I must leave the report to justify itself, inasmuch as I fail to recognise the good taste of introducing methods of personal recrimination into departmental reports. *M. C. C.*

LECTURES ON PLANT PHYSIOLOGY.†

By the recent issue of a translation by Prof. R. J. Harvey Gibson of Dr. Ludwig Jost's *Lectures on Plant Physiology*, students of botany in this country are once more indebted to the triple alliance of German scholarship, a good translator, and the Clarendon Press. In a substantial 8vo. volume of nearly 600pp., with 172 illustrations, Dr. Jost has compressed a thorough survey of the whole field of plant physiology in the light of present knowledge. It is probably unequalled as an up-to-date treatise. For the first time the recent researches of Haberlandt, Nemec, Correus, De Vries, Czapek, Pfeffer, and others are available to English readers in a single text-book of reasonable size.

The German edition appeared in 1903, and in its present form we are fortunate in having the author's corrections and additions up to 1906.

The 43 lectures are classed in three groups, treating respectively of Metabolism (plant chemistry, absorption, and conduction of water, assimilation of carbon and nitrogen, respiration, etc.), Metamorphosis (growth, reproduction, heredity, and variation), and Movement (transformation of energy and response to stimuli).

Although a work covering so wide a field must of necessity be a compilation, yet the present volume is something more than this. Dr. Jost

* Reports of the South-Eastern Agricultural College, Wye, by E. S. Salmon, F.L.S., Hon. F.R.H.S.

† Lectures on Plant Physiology, by Dr. Ludwig Jost, translated by Prof. R. J. Harvey Gibson. Clarendon Press, Oxford. Price 21s. and 24s. net.



[Photograph by W. J. Vasey.]

FIG. 76.—AVENUE OF POLLARDED ELMS AT HAMPTON COURT. (See p. 178.)

October 24, 1891, p. 480, Mr. J. G. Baker describes it under the name of *L. Wallichianum* var. *superbum*. A coloured plate published in the previous year in *The Garden* bears the name *L. ochroleucum*. Eventually the plant was made a distinct species and named *L. sulphureum*, under which name it is figured in the *Botanical Magazine*, tab. 7237, and *Gardeners' Chronicle*, September 15, 1906, p. 190.

The plant first flowered in this country in Messrs. Hugh Low and Company's nursery, and was exhibited by this firm at the meeting of the Royal Horticultural Society on June 25, 1889, when it received a First-Class Certificate from the Floral Committee. The height of the plant

upper half of the stem. When fully matured the bulbils should be harvested, and be dibbled at once into sandy soil in boxes. The following year they should be planted in a frame or in a situation in the open that can be protected from severe weather. The bulbils will flower when from three to five years old.

L. sulphureum can be cultivated quite easily in pots, but much better results are obtained by planting the bulbils in a bed or border of the conservatory or greenhouse. The best group of this *Lilium* I have seen in the open air was planted in the ordinary soil of a suburban garden, with a little lime rubble and chicken manure mixed with it at the time the bulbils were planted. In Devonshire and Cornwall it does splendidly in the open. *D. D.*

is a competent critic, and preserves an independent attitude throughout. The author, while pointing out the difficulties in the way of accepting certain arguments and theories, is never in a hurry to put forward an alternative explanation, or to substitute a solution of his own. He keeps in touch with current work and new views, but preserves an open mind, and does not hazard a positive opinion unless sufficient evidence has been accumulated on one side or the other. Thus the indefiniteness and inconclusiveness of several of the lectures, whilst a true reflection of the present state of our knowledge, will be disappointing to those who like to take opinions and judgments ready made. Yet it is just this judicious and critical attitude which makes the book one of peculiar value to the genuine student, for it trains him to think for himself, and leaving him unsatisfied, tempts him to follow up the points in question by reference to the original authorities (which are quoted in the bibliographies appended to each chapter), or even to attempt to solve them on lines of his own.

We do, however, find here and there expressions of the author's opinion stated in no uncertain fashion, and these are of interest as indicating his point of view in regard to some of the prominent questions. For example: "As our knowledge increases, the distinction between the different types of variation may be broken down; still, it is certain that mutability will remain the *chief*, if not the only factor in species formation"—page 395. "To attribute to the chromosomes, or, indeed, to the nucleus at all, the exclusive possession of the initials [hereditary factors or units] is a view which has in no sense been justified. . . . We conclude that the chromosomes are not definite *organs* of the cell . . . they are re-formed at each division, and hence the chief basis for believing them to be transmitters of hereditary characters disappears"—p. 378. "We . . . regard it as established that the supposed distinction between somatic and germ-cells does not in reality exist at all"—p. 380. With reference to Haberlandt's "light-perceptive organs," Dr. Jost says: "The experimental evidence in favour of the function of the ocular cells will scarcely stand critical investigation"—p. 475. In the two lectures on Geotropism, we have an excellent, though necessarily brief, summary of the various theories of graviperception, statoliths and otherwise. It is noteworthy that the author never digresses into mere hypothesis and vague theory, but keeps throughout in close touch with objective facts, and makes reference in practically every paragraph to facts and experiments on which the theories are founded.

In a book so replete with details, it is important that each subject should be easy of reference, and in this connection we could have wished for a more complete index.

There is a good summary of the contents at the commencement, but why in the table are some portions of the contents grouped in chapters, when in the body of the book there are no such divisions?

We do not, however, wish to end in a tone of criticism, but rather in one of gratitude to all concerned in the production of this admirable book.

GLEOSPORIUM DISEASE OF CURRANTS.

THE *Gloeosporium* disease of Currants is a leaf disease. Affected leaves are covered with numerous brownish, confluent spots, in which small cushions of spore-masses are visible under the microscope. The leaves begin to curl and eventually fall off. This generally occurs at the time the fruits are in full development, and, in consequence, they experience a sudden check in their growth, and begin to prematurely colour, shrivel and to drop. The accompanying illustration shows three twigs of a Black Currant bush almost defoliated. I have been told by a

large grower of Black Currants that the disease has caused this year more damage to the fruit crop than was ever the case with the "Big Bud" mite (*Eriophyes ribis*).

The fungus causing this disease formed an interesting memoir by Dr. Klebahn in *Zeitschrift für Pflanzenkrankheiten*, Vol. xvi., pp. 65-83. We find that the following species of the fungus cause similar injury on:—

Gooseberry = *Gloeosporium ribis* (Lib.) Mont. et Desm.

Red and White Currant = *Gloeosporium ribis* (Lib.) Mont. et Desm.

Black Currant = *Gloeosporium curvatum*, Oudemans (Mat. flor. Néerl. II. 28).

Dr. Klebahn, through a series of experiments, proves that the fungus hitherto known as *Gloeosporium ribis*, is only a form of a higher fungus, which he succeeded in cultivating. He observed on leaves, which had fallen to the ground and



FIG. 77.—SHOOTS OF BLACK CURRANT BUSH AFFECTED WITH *GLEOSPORIUM*.

remained there through the winter, a form which developed from the *Gloeosporium*, and was similar to the well-known Larch canker fungus *Pseudopeziza Willkommii*. He kept this fungus, to which he gave the name *Pseudopeziza ribis*, under observation, and established by experiments that the spores of the latter form developed into the same *Gloeosporium*, with which he succeeded in re-infecting Currants.

The fungus which caused the injury on the Black Currants, as illustrated, is described as *Gloeosporium curvatum*, a different species, with the spores of which no injury could be produced by infecting Red or White Currants, but affection was readily made on Black Currants. From the evidence of the fungus on Red and

White Currants, it may safely be concluded that this fungus (*G. curvatum*) may yet either prove to be identical with *G. ribis*, or that it possesses another *Pseudopeziza* form. The work of Dr. Klebahn is so recent, that no experiments with the Black Currant fungus have been reported in Germany, and it seems doubtful that there will be any, because the culture of the Black Currant in Germany is being very little practised.

This question is of more importance to English observers, and I hope, by the means of these lines, to find some independent co-workers! Though this investigation is more or less laboratory work, yet it is of economical value also, for it plainly illustrates the harm resulting from the bad practice of letting the leaves decay under the bushes; they should be collected and burned in all instances where the plants have been attacked.

Recent experiments dealing with the cure of this disease have been published by Dr. Ewert, of Proskau, whose interesting memoir on "Seedless Fruits" will still be in the memory of the readers of this journal (see *Gardeners' Chronicle* for May 18, 1907).

Dr. Ewert made experiments in a plantation of Red and White Currants (see *Zeitschrift für Pflanzenkrankheiten*, Vol. xvii., pp. 158-169), which showed pronounced injury by *Pseudopeziza ribis*, Klebahn (*Gloeosporium ribis* (Lib.) Mont. et Desm.). He treated some of the infested bushes with copper solutions and left some untreated. The solutions mainly employed were 1 per cent. and 4 per cent. solutions of the Bordeaux mixture, and 1 per cent. solution of basic acetate of copper, known as verdigris. He began spraying on April 4, and sprayed twice each week until May 30, with 1 per cent. and 4 per cent. solutions of the Bordeaux mixture and 1 per cent. solution of verdigris. The fruits were harvested on July 10 and 11, and the experiments showed plainly that the bushes treated were almost all free from disease, whilst those left untreated lost all their leaves. The results further showed that spraying till the middle of April was of no marked result. Thus it is obvious that the main time of infection is during the month of May. It is important to further state the results obtained by spraying with 1 per cent. or 4 per cent. Bordeaux mixture, or 1 per cent. solution of verdigris. The Bordeaux mixture undoubtedly takes the first place, because the verdigris solution showed a pronounced injurious influence on the foliage. Though the 1 per cent. solution of Bordeaux mixture has been employed for nine consecutive weeks, twice weekly, it by no means completely arrested the disease, though the disease certainly lost in virulence. The 4 per cent. solution of Bordeaux mixture left plain bluish incrustations on the leaves, and it was feared that the assimilation capacity of the leaves would suffer; these fears were realised, though the injury resulting from spraying with a 4 per cent. solution was much the smaller evil of the two. The rains washed off much of the fungicide. The experiments prove that copper solutions, especially the Bordeaux mixture, are excellent remedies for the *Gloeosporium* disease. Though the author, in his experiments, deals only with Red and White Currants, there can be little hesitation in saying that a like treatment of all infected species or varieties of Ribes will prove equally successful. In conclusion, it is to be said that the *Gloeosporium* disease is a malady of "old age." Bushes and leaves of even the more susceptible varieties must have attained a certain age before they are attacked. H. T. Güssow.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, ante, pp. 84-90.)

(Continued from page 172.)

7.—ENGLAND, N.W.

CUMBERLAND.—Considering the continued cold and wet weather, the fruit crops in this district are remarkably good. Green and black aphids, however, have been very troublesome, but on trees which were sprayed with an insecticide the results generally are good. Gooseberries, Black, Red, and White Currants are much over an average in quantity. Strawberries were plentiful, and, being backward, the fine weather is

July greatly benefited these fruits. The soil in these gardens is of a light, sandy nature. *William Scott, Eden Hall Gardens, Langwathby, R.S.O.*

— The promise of a good Apple crop was excellent up to the second week of May, but the cold, sunless weather, with frequent rains, after that date caused the fruits to set badly: a few varieties of Apple trees are carrying fair crops. All fruit will be very late in ripening this year. The Loganberry is fruiting splendidly; the berries are excellent for jam-making, and it is a valuable addition amongst hardy fruits. Our soil is a light loam, resting on a sub-soil of bastard clay. *Thomas Tunstall, Carleton House Gardens, Penrith.*

LANCASHIRE.—We have good crops of all kinds of fruits with the exception of Apples, which are a total failure. Many Apple trees are without a single fruit, whilst another tree of the same variety close by is carrying a fair crop. Old Apple trees have made a few inches of growth only. I attribute the failure of the Apple crop to the continuous rains, for, during a period of 70 days, only five were without rain. *Wm. P. Roberts, Cuerden Hall Gardens, Preston.*

— The excessive rains and cold weather adversely affected the fruit crops, especially on our cold, heavy soil, and the early promise of an abundant yield is not realised. Black fly has been very troublesome on trees bearing stone fruits, and green fly on Currant bushes. Caterpillars have not been quite so troublesome this season as in former years. Strawberries decayed on the ground instead of ripening. Our soil is a cold, heavy loam on a subsoil of clay. The aspect of the gardens is to the north-west, so that crops are always late in maturing. *E. F. Hazelton, Knowsley Gardens, Prescot.*

— The fruit crops, and especially Apples and Pears, in this district have suffered greatly from an absence of sunshine and continued low temperatures, followed by an incessant rainfall during the time the trees were in bloom. On April 17 9° of frost were registered, with the result that many of the fruits on early varieties of Pear trees dropped and the same thing happened with early Apples. Small bush fruits are a good average yield, especially Black Currants, Raspberries, and Loganberries. Strawberries have been very poor in quality, while many of the berries and much of the foliage have been attacked with mildew. *B. Cromwell, Cleveley Gardens, Alkerton.*

— The late spring frosts occurring whilst the trees were in full bloom and heavy with moisture caused much damage to the Plum and Damson crops in this neighbourhood. Apples also suffered severely from these causes, and Pears to a lesser extent. Some varieties of Apple trees are carrying full crops of fruits, and others have none. Of Pears, Louise Bonne of Jersey, Marie Louise, Easter Beurré, Beurré d'Amanlis, Beurré d'Aremberg, Beurré Diel, and Doyenné du Comice are the best fruited. Plums, with the exception of Victorias, are a failure. Strawberries suffered from the excessive rains, and many of the best fruits rotted before they were ripe. Taken altogether, the present is the worst fruit season in my experience of nearly 40 years. Our soil is a dark, sandy loam, generally overlying white sand. *Ben Ashton, Latham House Gardens, Ormskirk.*

WESTMORELAND.—Apple trees when in bloom promised well for a plentiful crop, but the continued wet, cold, and sunless weather during May and the early part of June ruined the fruits. Pears have also suffered from the same causes. Wall trees of Victoria and Gage Plums set heavy crops of fruits, and many have had to be removed. All crops are very backward, and unless bright weather ensues I am afraid many of the hardy fruits will not ripen. Our soil is a strong loam resting on clay. *F. Clarke, Lowther Castle Gardens, Penrith.*

— The Apple crop is very light in these gardens. Many trees are quite barren of fruits. Pears on wall trees are very sparse. The weather last year was dull, and the wood did not mature, and cold and wet weather prevailed this year when the trees were in bloom. Strawberry Royal Sovereign always crops well with us, but requires replanting every third year. *W. A. Miller, Underley Gardens, Kirkby Lonsdale.*

3.—ENGLAND, S.W.

CORNWALL.—Small fruits are plentiful and extremely good in quality. Strawberries have failed for the first time in eight years; cutting winds prevailed when these plants were in flower, and cold rains fell just before the fruits were ripe. Apricots are a splendid crop. In spite of protection, the severe weather of winter, and fierce gales accompanied with hail showers when the trees started into growth, killed some Peach trees and crippled many others. The growth of Apple and Pear trees has greatly improved with the warmer weather. *A. C. Bartlett, Pencarrow Gardens.*

— In March the fruit crops promised well, but the cold, wet weather during the three succeeding months completely ruined the fruits, excepting those of Peach and Nectarine, which are plentiful. These will be later than usual in ripening, but they promise to be of excellent quality. Small fruits are very plentiful. The soil in this district is very light in texture, and dries very quickly, even after long periods of rain. *Alfred S. Read, Port Eliot Gardens, St. Germans.*

— The Apple crop in this district is almost a failure. One farmer informed me that in two orchards he can count but four Apples on all the trees. Pears are also very few in number. The heavy rains spoil quantities of Strawberries. Currants, Gooseberries, and Raspberries are abundant. The soil here is a light, sandy loam. *W. H. Bennett, Menabilly, Par Station.*

DEVONSHIRE.—An abundance of blossom on all fruit trees set well, but the cold, sunless weather, with occasional frosts, thinned the fruits. In favoured positions the trees have heavy crops, but, generally, they are carrying a thin crop. The continued cold weather and heavy rains during April, May, and up to mid-June, have caused to be average what promised to be phenomenally heavy crops. *Andrew Hope, 38, Prospect Park, Exeter.*

— With the exception of small fruits, the fruit crops are a failure in this part of Devon. Continuous fogs at the time the trees were in blossom greatly contributed to the failure. The blossoms were plentiful, and I believe that the deleterious matter in the fogs was the cause of the foliage becoming burned. The leaves of Peach trees are much blistered; Gooseberries and Strawberries are the heaviest crops I have known. The foliage of Black Currant bushes is much blighted, and the fruits are not swelling. *Geo. Baker, Membrand Gardens, Near Plymouth.*

— Almost all kinds of fruit, with the exception of Apples upon Standard trees, are more or less plentiful. Pears are an average crop. Stone fruits are present in quantity, with the exception of Cherries. The trees have made a free growth, and notably those of Apricot, Peach, and Nectarine, while the two last-named are remarkably free from "blister or curl." Strawberries have been a heavy crop, but the early berries decayed somewhat badly. Givons' Late Prolific furnished a late supply of brightly-coloured and highly-flavoured fruits. Strawberries succeed well on our deep, sandy loam, which rests on the old red sandstone. *James Mayne, Bickton Gardens, East Budleigh.*

— Apple and Pear trees promised heavy crops of fruits, but cold winds caused the fruits to drop freely after they were set. Peach, Nectarine, and Apricot trees all set very heavy crops. Strawberries, generally, were good, although many were spoiled by the wet weather. Gooseberries, Black Currants, and Raspberries are all plentiful and of good quality. Red Currants are an average crop. Peaches, Nectarines, Cherries, Red and Black Currants have all been badly affected with aphids, and the foliage and shoots have required frequent sprayings and washings. Our soil is a rich and fairly heavy loam of volcanic origin, and overlying the red sandstone formation. *J. Coutts, Killerton Gardens, Broadclyst.*

— With the exception of Plums, there was an abundance of blossom on all fruit trees, and the promise for heavy crops of fruits was good. Notwithstanding this, the fruit crops are the worst for some years past. About half the flowers on Strawberry plants were "blind," and the fruit that ripened was very indifferent. During July frost was registered on several nights. *T. H. Slade, Poltimore Gardens, Exeter.*

GLoucestershire.—Many Apple trees developed but little blossom, and that which did appear failed in some instances to set, consequently there are few Apples in this district. Pear trees blossomed freely, and we have a good crop of this fruit. Cherries dropped badly after they had set. Plums, Peaches, Nectarines, and Apricots are all plentiful. Gooseberries are a heavy crop, also Red and Black Currants. Superlative Raspberries are carrying excellent crops of good fruits. Strawberries have done well, but some of the berries rotted before they ripened. The soil here is variable; some trees are growing in a sandy, and others in a clayey loam. The subsoil consists of the old red sandstone. *John Banting, Tortworth Gardens, Falfield.*

— Apple and Pear trees blossomed abundantly, but owing to cold winds and blight most of these fruits have dropped. Stone fruits, including Apricots, Cherries, Plums, Peaches, and Nectarines have needed severe thinning. Gooseberries, Currants, and Raspberries are good, and much above the average in quantity. Strawberries have been a good crop, but many of the earlier fruits decayed owing to continued rains. Strawberry Givons' Late Prolific furnished splendid fruits of excellent flavour and high colour. Our soil is a light loam resting on limestone rock. *F. C. Walton, Stanley Park Gardens, Stroud.*

— Apple trees produced an abundance of blossom. Early kinds are above the average in quantity. Late-keeping varieties are scarce. Pears are an average crop. Early kinds are greatly affected by the Pear-midge, though precautions were taken to combat this pest. Many kinds of Plums are plentiful, such as Victoria, Monarch, and Golden Drop, but Greengages are bad. The trees blossomed well, and set their fruits well under the protection of nets, but cold, damp weather and rough winds caused many of the fruits to drop. Of Cherries, Morellos are good, but very late in ripening. The cold season has adversely affected other kinds. Peaches and Nectarines are above the average in quantity, but a plague of wasps and flies has ruined many of the fruits out of doors. Apricots are over the average in number, but later than usual in ripening. All small fruits are good. Strawberries were an abundant crop, and the fruits were of good size, but they lacked flavour. Givons' Late Prolific produced grand crops of fruits. *A. Chapman, Westonbirt Gardens, Tetbury.*

— Although the season has been very cold, the fruit crops generally are satisfactory. Growth was very slow during May and June, and all trees suffered from blight owing to the cold winds and low temperatures. Apples are an average crop. Pears set well after an abundance of bloom, and are satisfactory. Plums are abundant. Peaches, on walls outdoors, are good, although the foliage is still pale in colour from the effect of the cold. Among small fruits Gooseberries are plentiful and good. I have not yet seen the new Gooseberry-mildew. Some of the Red Currant bushes are blighted, but they are carrying plenty of fruits. Black Currants promised well, but many dropped owing to the cold nights. Raspberries are good in every respect. Strawberries have been good, although wanting in colour and flavour. A few rotted, and some were attacked with mildew. The soil here is a strong loam resting on clay. *Alfred E. T. Rogers, Sudeley Castle Gardens, Winchcombe.*

HEREFORDSHIRE.—Apples are much under the average in quantity; varieties of Apples carrying the best crops are (culinary) Bismarck, Bramley's Seedling, Golden Noble, Golden Spire, Hambling's Seedling, Hornead's Pearmain, Newton Wonder, Stirling Castle, Warner's King, and Loddington Pippin; (dessert), Allington Pippin, Adams' Pearmain, Beauty of Bath, Fearn's Pippin, Margil, Ribston Pippin, Rival, and Wealthy. Of Pears, the best on bush trees are Clapp's Favourite, Conference, Emile d'Heyst, Fondante d'Automne, Fondante Thiriot, Marie Benoist, Magnate, President d'Osmonville, and Triomphe de Vienne. Our heaviest crops of Plums are on bush trees, which are much better fruited than wall trees. Small fruits are good, especially Currants. Our best Black Currant is Boskoop Giant. *Thos. S. Goodrich Court Gardens, Ross.*

— Apple orchards were a beautiful sight when the trees were in flower, but, owing to frost and wet weather, Apples are very scarce. Strawberries were fairly plentiful, but nearly all the berries were spoilt by mildew, some varieties being worse in this respect than others. Peach and Nectarine trees that were protected by netting on outside walls have had to have their fruits severely thinned. Our soil is a heavy loam resting on limestone. *George Mullins, Eastnor Castle Gardens, Leebury.*

— All fruit trees appeared remarkably well in the spring-time. The prospects for the Strawberry crop were extra good in May, but the unseasonable weather destroyed most of the berries. Strange to say, runners planted last year fruited the worst of all. Peaches and Nectarines out of doors set extraordinary crops. Some orchards contain a good number of Pears, and scarcely any Apples. The soil is cold and heavy, and rests on a stiff clay. *Thos. Watkins, Newport Hall Gardens, Eardisley, R.S.O.*

(To be concluded.)

The Week's Work.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Gloriosa superba.—These plants having finished flowering, the foliage is beginning to turn yellow. If they are growing in a prominent position and are considered unsightly, they may be taken from the wires and the growths trailed round some stakes, placed in the pots, after which the plants can be removed to a less conspicuous position, but one that is fully exposed to the sunshine. Gradually decrease the supply of water at the roots until the foliage and stems are quite matured, when it should be withheld altogether, and the roots kept in a dry condition throughout the winter in a structure having an atmospheric temperature of not less than 55°.

Caladiums, &c.—As the foliage ripens off, gradually reduce the water supply, but do not permit drought to occur until all the leaves have died quite away. The plants should now be placed in a moderately warm, but well-ventilated house or frame, and when thoroughly ripened off may be stored away for the winter in a warm position quite free from drip. Gloxinias and Achimenes may be treated in the same manner as they approach their resting period.

Begonias.—Most of these being nearly past the decorative stage, they may be removed from the houses and placed out-of-doors for the remainder of the month, or until the plants are cut down by frost. When this has taken place, and the soil is sufficiently dry, shake out the tubers and store them in a cool, dry place free from frost, such as is suitable for the storing of Potatoes.

Cyclamen.—If seed is not already sown, no time should be lost before carrying out this operation, as there is a decided advantage gained over sowing in winter, the plants having a good start if seeds are sown early in September and consequently a longer season to grow in. Thoroughly drain the pots or pans, and fill them with a mixture of light loam, leaf-soil, and plenty of sand. Place them in a warm house, taking care that the soil in the seed-pans never becomes quite dry. To assist in keeping the soil moist without frequent waterings, place some paper over the seed-pots, keeping this slightly damp. Remove the paper when germination has taken place, but shade the tiny seedlings from bright sunshine. Keep the pans on a shelf near the glass in an intermediate temperature, and pot the seedlings singly into small pots when they have become large enough to be handled. The plants should be encouraged to grow slowly all through the winter.

Schizanthus.—Seeds of *Schizanthus* should also be sown, and the pans placed in a cool frame on a damp base. Use light, sandy soil, and when grown large enough to be handled, prick out the young plants into pans or boxes. Keep them well up to the glass and ventilate the structure freely. Re-pot the plants as soon as they require more root-room, not allowing them to become pot-bound until they are in the pots in which they will flower. Keep them during the winter in a cool frame, *Schizanthus* being very impatient of heat.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Bedding Calceolarias.—In the West of England cuttings of these plants are rarely inserted before the end of September, but in less favoured parts it is now time to commence the work. The simplest method for their propagation is to prepare a frame, the bottom of which should be filled with porous material to ensure suitable drainage. The soil should consist of a mixture of three parts loam to one of leaf-soil, with the addition of plenty of coarse sand, and the whole should be passed through a sieve having a ½-inch mesh. Make the soil firm and spread a thin layer of silver sand over the surface. The cuttings should be short-jointed and without flower-buds; plant them firmly at a distance of 2 inches apart. Apply water copiously with a fine rose can, and keep the lights closed, except for half an hour each day, when they should be slightly tilted at the back to allow any superfluous moisture to escape. Shade the cuttings from bright sunshine, and when they are rooted admit air freely to harden them.

Watering.—The weather this summer has been moist and dull, but no great quantity of rain has fallen, consequently precautions must be taken to see that bedding plants do not suffer during dry, sunny weather. Such plants as *Lobelia cardinalis*, *Salvias*, *Nicotianas*, *Pansies*, *Violas*, and *Rudbeckias* will be found to suffer more from this cause than *Pelargoniums*, *Heliotropes*, &c. In these gardens, the soil is of a light texture, and *Cannas* need frequent waterings during even moderately dry weather to induce them to flower continuously; each watering is preceded by a light dressing of guano.

Bulbous Irises.—September is the best month in which to plant these Irises. If they are placed in different aspects in the garden, and a judicious selection be made of the best varieties of both the Spanish and the English types—the latter is a fortnight or more later in flowering than the former—a display of these flowers may be had for about five weeks. The best rooting-medium for both types is a light, rich soil that has been deeply worked. A general mistake is made in planting these Irises too thinly; a group of a dozen or more bulbs, planted at 6 inches apart, produces a much better effect than the same number scattered thinly along a border. *I. pavonia* (Moræa), the Peacock Iris, and *I. tuberosa*, the Snake's Head Iris, are also desirable species for planting; they should be given the same treatment as that described above. *I. reticulata* is one of the best garden species.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Masdevallias.—The proper seasons for repotting *Masdevallias* is at the beginning of September, and in February. September is generally considered the better time, because it is in autumn the plants make the greatest number of roots, and the cool, moist weather generally prevalent at this season is also favourable to the plants becoming quickly re-established. It is not advisable to repot any plant if it has already sufficient root-room and the compost is in good condition; neither should healthy specimens be disturbed unnecessarily that are needed for exhibition purposes next season, as they may fail to bloom satisfactorily the first year after repotting. But in some instances the compost may have become sour and stagnant, and this can easily be picked out down to the drainage and fresh soil substituted without causing much disturbance to the roots. Plants which have lost a number of leaves and become bare in the centre may now be safely divided and be potted separately for propagating purposes, or they may be remade up into neat, compact specimens. They will thrive equally well if treated either way. Select pots of suitable dimensions, bearing in mind that all the strong-growing *Masdevallias*, as *M. Veitchiana*, *M. ignea*, *M. Lindenii*, *M. macrura*, *M. coriacea*, *M. coccinea* and its numerous varieties (of which *M. c. Harryana* is an excellent example) are vigorous rooting plants, and requiring considerable space. Fill the pots to about one-half of their depth with broken crocks, and employ a compost of good, fibrous peat, polypodium fibre, and sphagnum-moss, mixing them in equal proportions, to which may be added a sprinkling of small crocks and coarse

silver sand. Cut up the materials roughly, mixing them well together, and make the compost moderately firm about the roots, especially towards the centre of the plant, for, unless this is done properly, the soil in that portion will decay more rapidly than that which is nearer to the sides of the pot. Carefully work the compost between the roots, keeping the base of the plant on a level, or just a little below the rim of the pot. When the operation is completed, prick in a few heads of living sphagnum-moss over the surface. This is a much better plan than covering the whole surface of the compost with a layer of chopped moss.

Dwarf-growing varieties.—*M. Wageneriana*, *M. Estradae*, *M. Shuttleworthii*, *M. Arminii*, *M. ludibunda*, *M. picturata*, *M. melanopus*, *M. ionocharis*, *M. hieroglyphica*, *M. O'Brieniana*, &c., form attractive objects when well flowered. Any of similar growth to those just enumerated should be grown in shallow pans, which may be suspended close to the roof glass, or they may be placed altogether upon an elevated position upon the stage. The critical time with *Masdevallias* is just after they have suffered root disturbance, it being an easy matter to afford an excess of water, which often results in the loss of many roots and leaves; therefore, to be on the safe side, it is advisable for the first few weeks to water very sparingly, giving just sufficient to induce the sphagnum-moss to grow, and as each plant becomes re-established, gradually increase the supply. After repotting, shade the plants from all sunshine and maintain a moderately moist atmosphere by damping the surfaces, in the house two or three times each day, but modifying this practice according to the locality and the construction and situation of the house. To avoid black and spotted leaves, also to prevent the spread of a fungus which attacks the leaves of *Masdevallias*, care should be taken to prevent an excess of atmospheric moisture during dull weather. When the temperature of the external atmosphere is falling below 50°, gradually reduce the amount of moisture inside, and where possible have the hot-water pipes made just luke-warm. Where no separate house is set apart for these plants, a warm, sheltered corner of the Odontoglossum house is the next best place for them. Keep all flowers picked off during the next three or four months, so that the plants will bloom the more freely in their proper seasons. The white *M. tovarensis* should not be repotted now unless a plant is in bad condition at the root.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

Street trees.—The planting of trees and their maintenance in the streets of towns and cities usually devolves upon the public works department, while the actual work involved is invariably carried out by the staff of the parks department where such exists. Thus, with the exception of deciding when and where trees are to be placed, street planting is to all intents and purposes a branch of park work. As the primary success in growing street trees largely depends upon planting them early in the autumn, it is well to have all the necessary preparations made before the planting season begins. The numbers of trees required, the kinds most suitable for the locality, and the selection of the trees themselves where possible, are all matters which should be seen to before the autumn. Tradesmen generally do not care for trees in front of their premises, hence it is inadvisable to attempt to beautify the business part of a town with trees, unless the streets are exceptionally wide. On the contrary, in the residential quarters most people are very anxious to have trees planted in front of their dwellings, and it becomes necessary to make certain restrictions to prevent this work from being overdone and from becoming a very expensive form of luxury. In this city trees are never planted in streets that are less than 45 feet in width, a rule which prevents a very large number of thoroughfares from being planted, much to the regret of their inhabitants. As trees are liable to suffer injury from many causes when growing in a public thoroughfare, it is inadvisable to plant either rare or expensive kinds. We make it a rule never to plant a tree costing more than 3s. 6d., in a public street, unless under the most exceptional circumstances.

Suitable trees for planting in streets.—The choice of trees suitable for town planting is an important matter, and has much to do with the failure or success of the undertaking. Soil, position, and local conditions are the more important factors in determining the selection of suitable trees. In most English towns few trees are more adapted for street planting than the Oriental Plane, which is capable of withstanding much of the ill usage incident to the life of a town tree. The Sycamore, Norway Maple, Turkey and Scarlet Oaks, fastigiate Poplars, Beech, Ailanthus, the ordinary Robinia, and the smaller-growing forms of the Elm are all useful trees for street-planting. Unfortunately many highly-ornamental and easily-grown trees are unsuited for this purpose on account of their bearing either showy flowers or prominent fruits. The Horse Chestnut is a beautiful object in a public street, but on account of its fruits it is not desirable to grow it near houses, for boys will persist in throwing stones to bring down the nuts in the autumn. The Mountain Ash and several other members of the genus *Pyrus* are ideal town trees, but children destroy them as soon as the fruits begin to colour. If our town children were taught, like those on the Continent, not to interfere with street trees, what great possibilities of beautifying many of the most sombre-looking parts of a town would city gardeners possess!

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq.,
Norwood, Alloo, Clackmannanshire.

Pineapples.—A dry atmosphere should be maintained in houses in which these fruits are ripening, and ventilation should be freely afforded during the daytime; allowing the top ventilator to remain open also a trifle at night. The temperature should range from 70° to 80° Fahr. Keep the plants dry at their roots, for if water is applied to the soil at the time the fruits are changing colour, decay will ensue in the centre of the crowns. If these directions are followed, Pineapples may be kept in a satisfactory condition for some considerable time after they are ripe. Plants of Pineapples intended for fruiting next spring will now require careful treatment, and no greater quantity of water should be afforded them than is necessary to prevent the foliage from flagging. Maintain a warm, humid atmosphere in the pits, and admit fresh air daily during hot weather. Gradually lower the temperature as the days shorten, and close the ventilators early in the afternoon so as to conserve the sun's heat. Suckers should now be detached from the parent plants, and be potted in turfy loam, using pots with a diameter of 6 inches for the purpose. Pot firmly, and plunge the roots in a bottom heat of 80°; the atmospheric temperature in the pit should be 70°. Keep the atmosphere humid and afford the plants a copious watering with lukewarm water, which will suffice until the suckers form roots. Sprinkle the plants lightly overhead both morning and afternoon.

Melons.—Plants bearing ripening fruits will require a free circulation of air about them by day, and a little from the roof-ventilators at night-time. This admission of air is necessary in order to prevent the fruits from splitting. Both the night and the day temperatures of the Melon-pit should range from 70° to 80°; maintain a dry atmosphere constantly and be careful not to apply much water to the roots. By discontinuing the bottom heat and maintaining a cooler and drier atmosphere, the supply of fruits will be available for a longer period than otherwise. Mulch the borders with horse-litter. Late-planted Melons that are swelling their fruits require to have a moist atmosphere about them, with a day temperature of 85° and 75° at night. The damping should be done regularly, and the plants watered with the greatest care. Occasional doses of liquid manure will be beneficial. Secure the fruits to the trellis-work; pinch the ends of young growths, but leave a few shoots unstopped, until the fruits are almost ripe, in order to encourage a free root-action.

Orchard-house trees.—Pot-trees of such fruits as Apples and Pears should never be allowed to suffer from want of water at their roots, and flagging of the leaves must be studiously avoided. Any fruits that are ripe should be gathered and placed in the fruit room. Foliage shading the fruits from the sun's rays should be entirely removed, or arranged at the back.

Feeding should be discontinued as soon as the colouring of the fruit commences. Allow the trees to receive the full benefit of night dews, for the dew at night and the sun's rays by day are essential to the best maturation and colouring of Apples.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to LORD CLINTON, Bicton,
East Devon.

Trained fruit trees.—If the lateral growths were pinched early in the season, secondary shoots will have formed, and these should now be stopped at the first leaf: this practice will favour the formation of fruit-buds at the base of the current season's shoots. A crowded condition of the lateral growths must be avoided, in order that the wood which should produce fruits next season may become well ripened: the hanging fruits will also benefit by the removal of superfluous shoots. The present is a suitable time to observe gross-growing trees that they may be marked for root-pruning towards the end of October and early in November. Frequently hose or syringe the foliage of trees trained against warm walls, for red spider is much easier kept away than eradicated when present. Aphids, too, will sometimes appear on Peach and Nectarine trees when syringing is discontinued while the fruits are ripening. Immediately the crop has been cleared, wash the trees with quassia-extract, and direct the syringe to the underneath side of the leaves, this position being a favourable lurking-place for insect life. In some gardens blackbirds and thrushes devour ripening Peaches, and crops of Figs are often entirely ruined by these birds unless netting is used to keep them at bay. Expose late ripening Peaches to the full rays of the sun by placing the foliage aside; part of a leaf may be cut away if it is unduly shading a fruit. Examine each day the traps set to catch earwigs, and destroy any that are caught by blowing them into a pail that is half filled with hot water.

Packing Peaches and Figs.—Both these fruits require very careful gathering and packing if they are intended for transit. Peaches should be first enclosed in tissue paper, twisted at the top with 2 inches to spare, so that the fruit can be easily taken out of the box. Next a piece of cotton wool of treble thickness should be wound around each, and afterwards they should be placed closely together in shallow boxes, or, if wood-wool be preferred, this may be put next the paper. Whatever material is used, all intervening spaces must be filled and the whole made moderately firm about each fruit, the base of which should rest on an inch layer of soft material, such as advocated above. Figs should either be wrapped in Spinach or soft Bean leaves, and be placed thickly together in quite shallow boxes prepared as for Peaches, with a layer of tissue paper over the fruits. The remaining space should be filled with a similar material as that used for the base. In packing Peaches, Nectarines, and Figs, only one layer of fruits should be placed in a box.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq.,
Cobham Park, Surrey.

Formation of Mushroom-beds.—A start should now be made to collect droppings from the stables for the purpose of forming mushroom-beds, collecting sufficient for making each bed in as short a space of time as possible. In the meantime, keep the collected droppings on a dry base in an open shed, and turn them over every morning until the required quantity has been obtained. When the beds are being formed, care should be taken to make them thoroughly firm by treading the droppings together, or if this cannot be done owing to the position of the bed, then by beating with a wooden mallet. After a few days the heat of the bed will commence to increase, and after a further lapse of time it will decrease. When the decrease has set in, and the temperature is at about 80°, the spawn may be inserted, first breaking it into pieces of about 2 or 3 inches square, and placing these pieces at about 2 inches deep in the bed. At the time of spawning, the atmospheric temperature of the house should range between 60° and 65°. When the bed has been spawned for one week add a thin layer of fine soil to the surface, applying it in a moist condition, and making it firm by

beating it with the back of a spade. Keep the atmosphere of the house moist and of even temperature until the first Mushrooms are ready for cutting, when a temperature of 55° will be quite high enough. The frequency at which fresh beds are made must depend upon the accommodation there exists and the demand needing to be satisfied. During the period the droppings are being collected give the house a thorough cleaning, and limewash all the walls, &c., renovating any planks that are faulty, and putting the whole of the interior of the house in good working order for the season.

Hoeing.—Continue to hoe at frequent intervals the surface soil between all winter crops. The season of growth is now becoming very short, therefore afford every assistance possible to the various crops, so that they may become properly matured, and be therefore the better able to withstand severe weather in winter. By freely using the hoe both between the crops and on vacant plots at this season, before the weeds have ripened seed, much labour will be saved next season.

Early Brussels Sprouts.—A few of the old leaves at the base of the plants should be taken off to allow a free circulation of air and light among the crop, particularly where much growth has been made and the leaves are now thick together. If this work is neglected the young Sprouts will become drawn, weakly, and loose.

Celery.—Attend to the earthing-up of this crop, doing the necessary work at the first favourable opportunity; but never, on any account, carry out such an operation when the leaves or stems are approaching a damp or moist condition, or decay of the crown will take place.

Turnips.—Late Turnips have been more satisfactory than for several seasons past. The seeds have germinated well, and the young plants have grown quickly, and consequently are unusually free from the infestations of "fly." The crops will, in most cases, require thinning, and this work should be done as early as possible to prevent the young plants from becoming overcrowded.

THE APIARY.

By CHLOVIS.

A word in season.—Those who are fortunate enough will now be counting up their gains, but most beekeepers will be filled with disappointment because of their losses. From all parts of the kingdom there were complaints about the complete loss of stocks in 1904 and 1905, but the losses of 1908 will be even greater than those if the bees are not given food at once. It is surprising how little has been stored in the brood-chamber this year, and how very weak the stock are.

How to make Syrup.—We must feed at once, in order that the bees may have a good supply of food next March and April, and also to encourage the queen to lay a large quantity of eggs that there may be a good cluster of bees to keep up the necessary heat of the colony in the coming winter. A strong colony always winters better and more economically than a weak one. Take about 8 lb. of white sugar and boil it well in 4 pints of water, taking care that it does not burn, and, when cool, place the syrup in jam bottles and cover with muslin. Take care to fill the bottles to the brim, because, if any air is left in the pots the syrup will be forced out by it; this will flood the floor board, and robbing with all its attendant troubles will commence.

How to put on the Syrup.—Cut a hole in the quilts, about 2 inches square, on three sides, and turn back the flap; over the hole place a piece of wood, 6 inches square and $\frac{1}{2}$ inch thick, having a hole in the centre about 1 $\frac{1}{2}$ inches in diameter. This stand will raise the bottle above the frames and give the bees freer access to the syrup. Overturn the bottle on the wood, so that the mouth of the bottle will be over the hole in the wooden stand.

A warning.—Robbing is not only caused by letting the syrup run on the floor board, but also by spilling the syrup near the hives, and by putting on the food during the day. Evening is the more suitable time to perform the operation. When feeding take care to wrap the bottle of syrup up warmly to conserve the heat, for bees prefer the liquid lukewarm. Many beekeepers are very careless in this respect, and the interior of the hive is very draughty.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, SEPTEMBER 7—

Pollockshaws Fl. Sh.
Soc. Franc. d'Hort. de Londres meet.
German Gard. Soc. meet.

TUESDAY, SEPTEMBER 10—

Scottish Hort. Assoc. meet.
Dahlia Sh. in Manchester Botanic Gardens 2 days).

WEDNESDAY, SEPTEMBER 11—

Roy. Caledonian Hort. Soc. Sh. at Edinburgh (2 days).

THURSDAY, SEPTEMBER 12—

London Dahlia Union's Sh. in Botanic Gdns., Regent's Park (2 days).

FRIDAY, SEPTEMBER 13—Hamilton Fl. Sh.

SATURDAY, SEPTEMBER 14—Newton Mearns Fl. Sh.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—55.1°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, September 4 (6 P.M.): Max. 60°; Min. 46°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, September 5 (10 A.M.): Bar., 29.8; Temp., 65; Weather—Overcast.

PROVINCES.—Wednesday, September 4 (6 P.M.): Max. 61°; Ireland, S.W. coast; Min. 48°; Scotland N.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—

Sale of Dutch Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY TO FRIDAY—

Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

MONDAY—

Twenty-second Annual Unreserved Trade Sale of Pot Plants, at Dyson's Lane Nurseries, Upper Edmonton, by order of Messrs. H. B. May & Sons, by Protheroe & Morris, at 11.

TUESDAY—

Annual Trade Sale of winter-blooming Heaths, &c., at Burnt Ash Road Nurseries, Lee, S.E., by order of Messrs. B. Maller & Sons, by Protheroe & Morris, at 11.

WEDNESDAY—

Great Annual Trade Sale of winter-flowering and other Plants, at The Nurseries, South Woodford, by order of Mr. John Fraser, by Protheroe & Morris, at 11.
Lilium Harrisii, Roman Hyacinths and other bulbs, Palm seeds, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 5.

THURSDAY—

Twenty-sixth Annual Trade Sale of winter-flowering Heaths, &c., at The Longlands Nursery, Sidcup, S.E., by order of Messrs. H. Evans & Sons, by Protheroe & Morris, at 11.

FRIDAY—

Choice importations of Odontoglossum crispum, Cattleyas, Gigas, Mendelii, &c., also established Orchids, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12-45.

tributed all over the country who have noted each year the dates of flowering of certain specified plants, the dates on which certain migratory birds were first seen or that when the note of other birds was first heard, and the first appearance of certain common insects. The observations are sent to him and are grouped under eleven large districts into which the British Isles have been divided for the purpose, and for each district and for each subject of observation he has obtained a series of mean dates which may be regarded as characteristic of an average phenological year. The deviation of the dates in a given year and district from the average enables the reader, therefore, to get a fairly good idea of the character of the season in that part of the kingdom, and to appreciate what has been the cumulative effect of the various elements of climate upon vegetable life and upon those forms of animal life with which the gardener is chiefly concerned. The Report before us was prepared for the Royal Meteorological Society, and it contains the results of Mr. Mawley's analysis of the observations for the agricultural year extending from December, 1905, to November, 1906, and supplies much interesting information, for which the Report itself should be consulted by those who are interested in the subject. But, in addition to the purely phenological results, it gives a good general summary of the most noteworthy features of each of the four seasons, which should enable horticulturists and agriculturists to better understand some points connected with their work which may perhaps have been a little puzzling to some of them. Mr. Mawley mentions as the most noteworthy features of the weather in 1906 which affected vegetation, the dry period which lasted from the beginning of June until the end of September, and the great heat and dryness of the air at the close of August and the beginning of September. He points out that, whilst wild plants came into flower earlier than usual until the middle of April, those which flowered after that date were later than usual. A remarkable result of the unusual weather last autumn was the very long time the trees retained their foliage without assuming any change of colour.

Potato Trials.

We have already referred to the trials of tuber-producing species of Potatoes by Messrs. Sutton and Sons, at Reading, during the passing season. But so far these tests have been furnished by pot plants grown under glass. It is therefore interesting to find that practically all the species have also been grown in the open ground at the Southcote trial grounds, and with results very much the same as were furnished by the house-grown plants. Several species seem to be much too delicate to thrive out of doors in such a season as we have experienced this year. Some others show admirable qualities, and none more so than *S. etuberosum*, of which there is growing a good breadth, the plants having spreading tops, full of bloom, and leafage of a somewhat glossy nature. It was interesting to note, on a recent visit, that, whilst there was not an ordinary commercial variety, however strong, but showed some evidence of diseased leafage, not a speck or spot could be found on the leafage of *S.*

etuberosum. That fact naturally leads to the hope that this species may yet become the parent of a disease-resisting race of Potatoes. Messrs. Sutton's anticipations that, because seedling plants from it show a certain amount of diversity, this species may have been the originator of all the varieties now in commerce is supported by the fact that the seedlings show material approach to the culinary Potatoes. It has, however, to be mentioned that, ever since its introduction to this country, *S. etuberosum* seems to have retained its specific form. Apart from certain seedling progeny, the stock plants of the species growing at Reading remain pure to specific character. Contrary to the habit of commercial varieties that have been propagated year after year from tubers, there are among the seedling Potato plants raised this year from commercial varieties crossed with each other, some that show not merely extraordinary growth, but also abundant flowers of remarkable size and colour. A breadth of the yellow-flowered selection from the bluish-flowered Up-to-Date now shows adherence to that character, although last year some plants reverted to the normal colour. The yellow tint is due to the interesting fact that petals have in the flowers become partially changed into stamens, hence the singular colour presented in the flowers of this selection of Up-to-Date.

The trial of Commersoni violet (*Labergerie*) and Blue Giant (*Paulsen*) out in the open is an extensive one, running into some 20 rods area. There is a large breadth of each variety, and they appear to have identical features. Both stocks being imported show very robust growth. There are also breadths of both raised from tubers grown at Southcote last year, the plant growth upon these latter being much less robust.

But test roots lifted from all the stocks showed that the best tuber-produce is obtained from plants of medium growth and from locally-grown sets. Gross tops do not always mean that there is a good crop of tubers.

Some locality tests as made last year were repeated. Scotch, Irish, Lincoln, and Berkshire seed tubers were planted of several varieties. There was very little difference in the crops raised from tubers obtained from Scotland and Ireland, both giving much better results than did either the Lincoln or Berkshire tubers. The testing of immature or unripe seed-tubers against others of the same stock left to fully mature in the ground has constantly shown that the immature tubers are most productive. Four varieties were thus tested in the present trial, and in each case the results agreed with those obtained at previous trials. It was found also that tubers lifted on July 18th proved to be more productive than those lifted also to be unripe on August 1st. That point would, however, have to be governed by the character of the variety, the position, where grown, and the general character of the season.

In order to check scab disease in the tubers, rows of Potatoes were, at the time of planting, dressed with sawdust, with which was mixed a small quantity of salt. So far as present appearances can be relied upon, the result has been a success, for such tubers as were lifted were very clean, whilst from other rows

The word "phenology" is not one with which many people are familiar, and since we have turned to a good many dictionaries for enlightenment as to its meaning, but without finding any, we are not surprised at the fact. The author of the report has defined the word elsewhere as "the science of appearances . . . it deals with the first appearance each year of certain wild flowers, birds, and insects"; and we might amplify this definition by saying that the function of phenology is to show the character of a season by exhibiting its effect upon the growth of plants, the migration of birds, the prevalence of insects, &c. For many years Mr. Mawley has directed the work of a large number of observers dis-

* Report on the Phenological Observations for 1906, by Edward Mawley, F.R.Met.Soc., V.M.H. (Quarterly Journal of the Royal Meteorological Society).



SENECIO WILSONIANUS, A SPECIES FROM WESTERN CHINA. FLOWERS YELLOW.

not so treated scab was plentiful. The experiment may, if good follows, have great value for Potato growers. Other rows treated with a proprietary substance not unlike tar has so far shown no good results.

The tests or experiments that have been conducted at Southcote this year are of a very modest character as compared with the elaborate series conducted last year, but, such as they are, they afford results that are of value to all Potato growers. It has not been shown at present that any gain is to be obtained from the *Solanum* species that Messrs. Sutton are cultivating, but at least they are interesting, and they are certainly capable of affording valuable information and material to botanists. It is, however, to the improvement of the Potato of commerce that practical men look forward, and especially so at the present time when we are said to be threatened with a tuber crop some 30 per cent. below the average.

RESEARCHES AT CAMBRIDGE.—The second part of Volume II. of the *Journal of Agricultural Science** is a record of some of the valuable work now being carried on at Cambridge. In the papers here printed we see, as it were, the fighting line of modern scientific investigators steadily making their way into the unknown, wrestling with and gradually overcoming by skilful experiments and patient research the obscure problems which exist in the vegetable world. It is noteworthy that all the papers here given, while examples of pure research and untrammelled by commercial connection or control, have yet a direct bearing on practical economic problems. Four out of the seven papers deal with Genetics—the new name for the old problems of heredity, variation, and descent—in a word, the science of breeding. Mr. BIFFEN contributes two important papers on cereals. In the first he continues his *Studies in the Inheritance of Disease Resistance*, and confirms and elaborates his previous interesting discovery that (1) liability, and (2) immunity to "rust" form an allomorphic pair of unit-characters in Wheat plants. That is to say, when a strain of Wheat, very susceptible to attacks of rust, is crossed with another strain which is known to be immune (or nearly so), the resulting hybrids are found to be, without exception, susceptible. But in the next generation raised from these hybrids, it is found that about one-fourth of the plants are immune (like the original immune parent), and the other three-fourths inherit the liability to disease. In the succeeding generations the immune plants retain their purity, while those liable to disease give off in each successive generation fixed proportions of pure susceptible, impure susceptible, and pure immune forms, in accordance with the Mendelian laws. Unfortunately, the type of Wheat which is valued for its resistance to parasitic disease is practically worthless in other respects; but Mr. BIFFEN's experiments show that by making suitable crosses and growing sufficiently large cultures it will be possible to raise a breed in which the valuable "immunity" of the otherwise worthless Einkorn Wheat is combined with characters from other varieties which (except for their liability to disease) are regarded by farmers as of first-class quality. Mr. BIFFEN's other paper gives the results of his hybridisation experiments with a number of varieties of Barley. Many pairs of characters are shown to follow Mendel's laws, while in other cases complications and deviations arise which call for further research. Miss D. C. E. MARRYAT supplements

Cambridge Press, 5s. net.

Mr. BIFFEN's work on Wheat by an investigation into the minute details of the relation between the parasitic rust fungus and the infected Wheat plant. She confirms the view of former investigators that immunity is quite independent of any structural character, such as thickness of cell-walls or size and number of stomata, and concludes that immunity to disease depends upon the presence or absence of mutually destructive toxins and antitoxins. Miss MARRYAT's paper is illustrated with figures showing the germination of the rust spore and its growth and destructive action upon the cells of a "susceptible" Wheat, while other figures exhibit the death and disintegration of the fungus when invading an "immune" variety. Another important paper is that of Mr. T. B. WOOD's on the *Chemistry of Strength of Wheat Flour*, in which an attempt is made to correlate the qualities recognised by millers and bakers with the ascertainable chemical and physical characters of the Flour. This is an exceedingly complicated problem, and one which is in urgent need of further investigation. In the same number of the journal is a paper dealing with the soils of Cambridgeshire from a farmer's point of view in relation to the underlying geological formations, by Mr. F. W. FOREMAN, and one on "Losses in Making and Storing Farmyard Manure," by Mr. T. B. WOOD, who compares the results obtained from cake-fed heifers and those fed only on roots and hay. There is also a note by Mr. W. L. BALLS, of the Botanical Laboratory, Cairo, on "Mendelian Heredity in Cotton."

INSECTS AFFECTING FRUIT TREES.—A pamphlet of 36 pages, by Dr. C. J. S. BETHUNE, Professor of Entomology at the Ontario Agricultural College, has been issued by the Ontario Department of Agriculture. It treats only of those species of insects which are most commonly met with, and that are sufficiently abundant to cause serious trouble to the fruit-grower. Particular attention is called to the uselessness of employing measures of destruction or prevention, yet allowing wild trees and bushes affording hiding and breeding places for the particular insects to grow without molestation, mention being made of the wild Cherry, wild Plum, Hawthorn, and Mountain Ash. None such should be allowed to exist near an orchard or fruit garden. The pamphlet contains illustrated chapters on some of the fruit-tree pests only too well known in Britain, as the Codlin moth, eye-spotted bud-moth, leaf-roller moth, Apple aphid, woolly aphid, oyster-shell bark louse, Pear tree Psylla, shot-hole borer or fruit-tree bark beetle, Pear tree slug, Plum curculio, Peach scale, Phylloxera of Grape vine, and several insects peculiar to the North American continent. A brief list of insecticides is given, together with the most approved methods of application.

"THE AMERICAN FLORIST."—Our American contemporary, known by the above title, issued its one thousandth number on August 3. Since the first issue, which appeared on August 15, 1885, it has recorded the remarkable growth of the cut-flower trade, and the wonderful changes and development in methods that have taken place in American horticulture. It has always taken a prominent part in assisting in the development of the horticultural industry. We congratulate our contemporary on its success, and wish it continued prosperity, and a long career of usefulness.

AN ANCIENT FLORIST'S BUSINESS.—We note that M. JACQUES ROLLAND, Nîmes, France, states in a contemporary that his seed business has been continued uninterruptedly since 1680, or 227 years, and he adds: "I should be very glad to know if I can count my business to be the oldest establishment in the seed trade."

STUDY OF ACCLIMATISATION IN AMERICA.

We have received from Mr. LEONARD BARRON, secretary, a preliminary programme of the proceedings that will take place at the International Conference on Plant Hardiness and Acclimatisation to be held on October 1, 2 and 3, 1907, in the rooms of the American Institute and in the Museum Building of the New York Botanical Garden. The conference, it will be remembered, will be held under the auspices of the Horticultural Society of New York. The following incomplete list of papers which have been promised will serve to indicate the general scope of the subjects that the conference will cover, and the committee of arrangements will be glad to receive promises of other papers or suggestions. It is purposed to publish in one volume a complete report of the proceedings:—
 "The Determining Factors in the Seasonable Activity of Plants," by D. T. MACDOUGAL, Tucson, Ariz.; "Factors that Control Acclimatisation," by HENRY C. COWLES, University of Chicago, Ill.; "Evaporation as a Climatic Factor Influencing Vegetation," by B. L. LIVINGSTON, Tucson, Ariz.; "Air Drainage as Affecting Hardiness of Plants," by ERNST A. BESSEY, Subtropical Laboratory, Miami, Fla.; "The Real Factors in Acclimatisation," by FREDERIC E. CLEMENTS, University of Nebraska; "Plant Improvements Needed in Specific Cases," by W. M. HAYS, Assistant Secretary of Agriculture; "Comparative Hardiness of Plants of the same Variety from Northern and Southern Points," by J. C. WHITTEN, Missouri; "Observations on Eucalyptus Hybrids; the Japanese Loquat in Algeria; Truth to Seed of Eastern and African Varieties of *Vitis vinifera*," by M. ROBERT, Algeria; "Temperate Zone Plants in the Tropics," by D. W. MAY, Porto Rico; "Acclimatisation of Economic and other Plants in the West Indies," by Sir DANIEL MORRIS, Imperial Department of Agriculture for the West Indies; "Co-operative Testing to Ascertain Hardiness in Fruits," by H. L. HUTT, Guelph, Canada; "Resistance to Cold, Heat, Wet, Drought, Soil, &c., in Grapes," by T. V. MUNSON, Texas; "Developing Hardy Fruits for the North Mississippi Valley," by SAMUEL B. GREEN, Ohio; "Hardiness of the Peach," by U. P. HEDRICK, Geneva, N.Y.; "Hardiness of Apples," by O. M. MORRIS, Oklahoma; "Fruits and Trees in the North-West," by W. S. THORNER, Washington; "Hardiness and Acclimatisation of Alfalfa," by B. C. BUFFUM, Wyoming; "Some Work with Timothy and Awnless Brome Grasses," by S. FRASER, Genesee, N.Y.; "Hardiness of Ornamental Plants in the Middle North-West," by ANTHONY U. MORRELL, Minnesota; "Studies on the Acclimatisation of Plants in the Prairie Regions," by L. H. PAMMEL, Iowa; "Observations in the Region at the Head of Lake Michigan," by JENS JENSEN, Chicago, Ill.; "Experiments in Plant Acclimatisation in Alaska," by WALKER H. EVANS, U.S. Department of Agriculture; "Fifteen Years' Experience in Southern California," by D. F. FRANCESCHI, Santa Barbara, Cal.; "Some Experiences with Field Crops in Virginia," by ANDREW J. SOULE, Blacksburg, Va.; "Observations on Hardiness of Plants Cultivated at the New York Botanical Garden," by GEO. V. NASH, New York Botanical Garden; "Some Anomalous Observations in St. Louis," by W. TRELEASE, Missouri Botanical Garden, St. Louis, Mo.; and "Problems of Hawaii," by J. E. HIGGINS, Hawaii. Promises of co-operation have also been received, writes the secretary, from Messrs. W. ROBINSON, J. BACKHOUSE, and the ROYAL AGRICULTURAL SOCIETY, of England; M. PH. DE VIMORIN, of France; Mr. W. SAUNDERS, Canada, &c.

APPLES SAID TO BE PROOF AGAINST AMERICAN BLIGHT.—An exchange of experiences and opinions in regard to varieties of Apples and Apple stocks that have been thought to be immune from attack from the American aphid or blight (*Schizoneura lanigera*), was recently published in *Möller's Deutsche Gärtner-Zeitung*. Taking a survey of the whole, there are eleven gardeners and nurserymen and the Biological Institute at Dahlem taking part in the discussion, and there appears to be one or two varieties of Apples which are said to be proof against this pest in certain specified localities. Bismarck, Charlomowsky, the Aluten, which is good for the first graft or bud; Gruner Fürstenapfel, Reinette de Canada, Flamed Cardinal, Sheep's Nose (an old Devonshire variety), Grey Autumn Reinette, and Golden Pearmain are said to be infested when trees of White Winter Calville, Great Cassel Reinette, and other soft-fruited varieties are grown in their neighbourhood. Some gardeners state that Emperor Alexander, Striped Beefin, and Northern Spy are immune; whilst others say that these varieties are those that are the worst infested with them. We may therefore assume that no variety is proof against attack. We are not surprised that one correspondent, after years of fruitless endeavour to get rid of the pest, finds the best results to follow good cultivation of the trees, by affording as much organic and inorganic manure as may be adjudged necessary, more especially nitrate of soda, superphosphate of lime and potash, and painting the stems and lower limbs with limewash in the autumn after the leaf has fallen and in the spring before the buds open. The Dahlem authorities lay great stress upon cleaning off the rough bark, and the brushing out of all hiding places, angles, crevices, and washing with tobacco-water. For the destruction of the aphid on the roots, soap suds containing soda is a good means, applying the liquid twice or thrice during the winter.

ONTARIO VEGETABLE GROWERS' ASSOCIATION, 1906.—The second annual report of this association, published by the Ontario Department of Agriculture, affords the reader a good idea of the state of vegetable cultivation in this province. What crops succeed in the various descriptions of soils, how they are best grown, the manures that are found most beneficial, the insect and fungus pests that infest crops, with the methods found suitable for their destruction or prevention, how to get crops to market, summer and winter cultural conditions, and much more that is useful to the man who elects to make this part of Canada his home. The greater part of the information is given in the form of questions and answers.

ELEMENTARY BOTANY: STUDIES IN PLANT LIFE.—J. ADAMS, M.A., Professor Royal College of Science (Ireland), School and College Series, published by FALLON & Co., LTD., Dublin and Belfast. We are sometimes asked for a simple book on elementary botany, one that is simple enough to be thoroughly understood by a student who is not yet familiar with the scientific terms employed in the science. The author of this little work carefully avoids using more of these terms than he can help, and speaks in popular language to make the subject intelligible to all. Considering that there are more than 16,000 technical terms employed in the science of botany, those may welcome this book who feel that such terms make the pursuit of botany as a hobby a difficult and uninteresting task. It may be pointed out, however, that the serious student is bound, sooner or later, to acquire a knowledge of strictly botanical language. The author has divided the subject into single chapters, of which each one may be studied separately. The book is well illustrated with

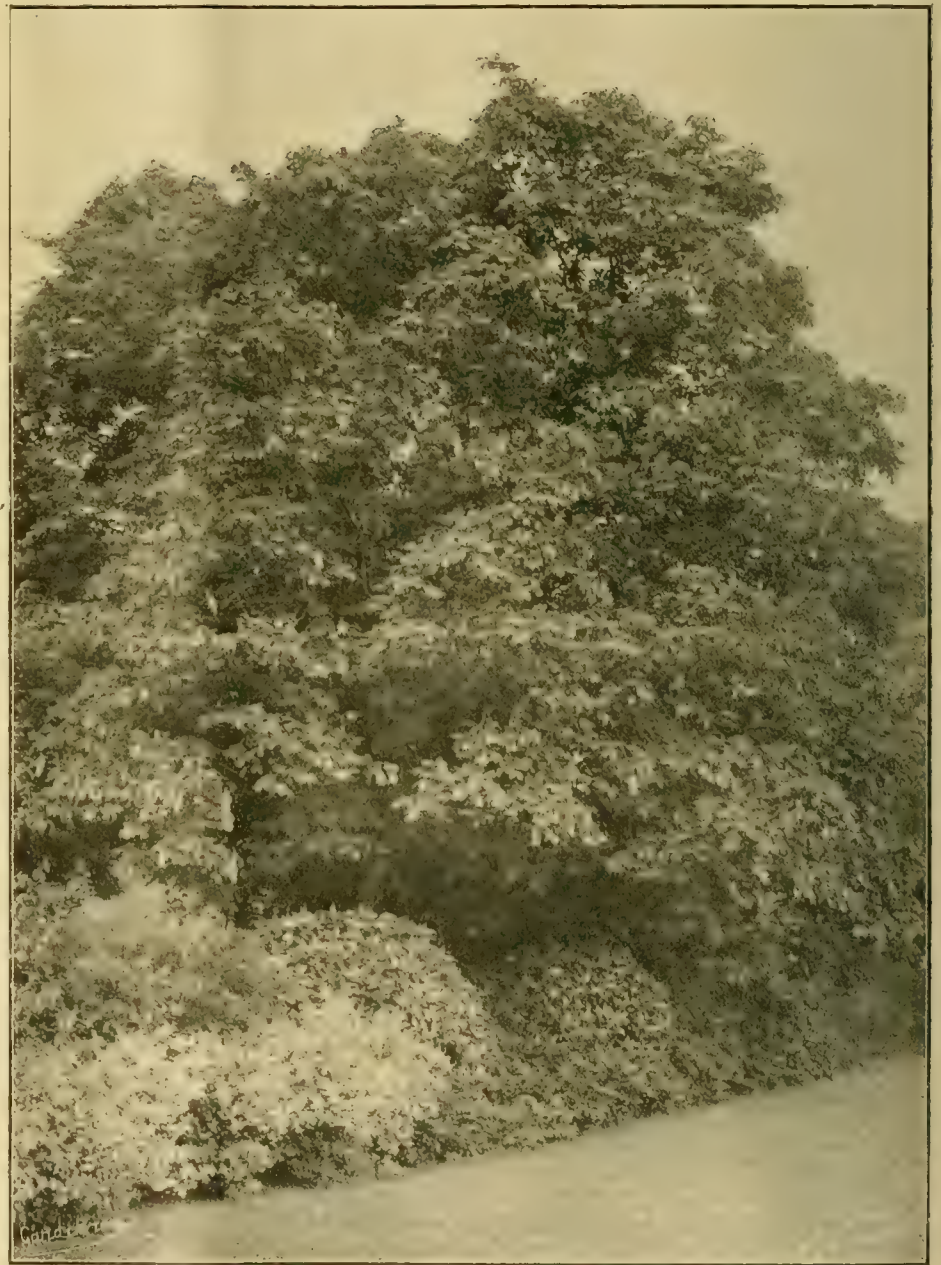
over 350 figures. Two chapters are added to the general work, one of which deals with plant habitats and the other with poisonous plants. This little book is well suited for use in schools and especially for the teaching of Nature study.

GERBERA JAMESONI.—Mr. R. ADNET, of Antibes, writing in the *Revue Horticole*, describes his experience with *Gerbera Jamesonii*, and shows that like other composites it is likely to afford interesting variations in the form and colouring of the blooms. The red colour already varies from the deepest orange to pure scarlet; also a beginning in the doubling of the florets has been noted. The plant requires much nutri-

ment of excess of moisture. Under suitable cultivation they flower when about five months old. The plant is employed in the south of France for filling groups and beds, and for furnishing blooms for cutting. The florists are hoping to obtain a dwarf, compact-habited race, with a less tender constitution and greater vigour in growth than the type. The variations in the colour of the flowers has been remarked upon in these pages on previous occasions,

CLADRASTIS TINCTORIA (YELLOW WOOD).

It is not often that this interesting tree flowers in the British Isles, and it is due probably to



[Photograph by E. J. Wallis.]

FIG. 78.—CLADRASTIS TINCTORIA AS FLOWERING AT KEW.

ment, and a porous not too heavy soil; it is easily injured by much moisture, but applications of manure water when the plants are in full growth are followed by good results. The collar must be placed slightly above the ground level when planted, this part being otherwise liable to be injured by moisture. Increase by means of seed is preferable to division of the root-stock. Fresh seed vegetates from 90 to 95 per cent. in the course of five to eight days. The young seedlings are particularly impatient

the tropical heat of August and September, 1906, that we have been enabled to enjoy them this summer. The species is a native of the inland slopes of the Alleghany Mountains in the States of Tennessee, Kentucky, and North Carolina. Although nowhere very plentiful, the beauty and distinct appearance of this species attracted the notice of the early botanical travellers, and it was introduced to England in 1812. It is to be found in most of the older collections of trees in this country, and in some of them fine

specimens exist. Mr. Elwes has not found one larger than that at Sion, which is 60 feet high, and has a trunk girthing 7 feet. The specimen at Kew, of which an illustration is given at fig 78, is a healthy tree, 35 feet high, with a thick trunk branching low down; the head of branches is 45 feet across.

Cladrastis tinctoria has pinnate leaves, consisting usually of seven or nine leaflets, but sometimes with two or four more. The terminal leaflet is 3 inches to 4½ inches long, obovate or oblong, the lower ones one-half to two-thirds as large. The base of the leaf stalk is swollen so as to enclose the bud, a character which readily distinguishes this species from *C. amurensis*, the only other species in general cultivation. In the latter species the axillary buds are quite exposed.

always dies off a bright yellow in autumn, thus compensating, in some measure, for its uncertain flowering. *W. J. Bean.*

THE GLASGOW PARKS.

GLASGOW is singularly fortunate in possessing a large number of public parks and open spaces. Of the former, indeed, there are no fewer than 36, some of which are so advantageously situated as regards elevation and consequent command of the beautiful country surrounding the city as to have few rivals elsewhere. The Kelvingrove Park, Bellahouston Park, Glasgow Green, Rouken Glen Park, Queen's Park, Tollcross Park, and Springburn Park are

The glen sides are steep, even precipitous, and are densely hung with Ferns of various species, including Lady Ferns, Male Ferns, Polypodies, &c. These Ferns are growing in the greatest luxuriance and abundance, despite the fact that the Glen is a favourite popular resort. Under the care of Mr. James Whitton, who superintends the whole of the parks and open spaces, the danger of vandalistic behaviour, apparently inseparable from free popular access to wild, natural scenes of this description, is being minimised as far as possible by the provision of appropriate rustic fences and well-defined paths. A judicious thinning out of shrubs and tree foliage has revealed delightful vistas, and affords a glimpse of the tumbling stream and its falls, as well as of the Fern-clad walls of the ravine. In this park the maintenance of its naturally wild and picturesque features is the chief object; in Springburn and Tollcross Parks, and also in the Botanic Gardens, however, there are conservatories and considerable ranges of greenhouses, propagating houses, and frames. Some of these are open to the public as houses of floral display, and the contents of others are available for the floral decorations inseparable nowadays from civic banquets and entertainments generally, or for the benefit of the lecturers and students of the university close by. In this particular connection there is a Mossery, in which are hundreds of living specimens of Mosses, Marchantias, &c., in splendid condition, set off here and there by fine varieties of native varietal Ferns, of which a good collection is also planted in the open.

In the Palm house at the Botanic Gardens are some large Tree Ferns and a gigantic Bamboo, which, at a height of 50 feet, has reached the glass roof. Unhappily, the Glasgow air is not of the purest, owing to the immense numbers of industrial manufactories which not only surround but actually permeate the city. But, despite these unfavourable circumstances, it requires a very keen eye to detect a fault, so judicious has been the selection of the plants in cultivation. In Springburn Park a conservatory is provided with a gallery, from which is obtained a comprehensive view of a collection of Tree Ferns, the finest I have seen; these tall Ferns are mingled with Palms, Cordylines, and other plants suitable for a warm, temperate climate. From below, the majestic growths of associated Ferns, Palms, and many other tall-growing plants appear as mere mixtures of interlaced foliage or frondage, the old and shabby growths perhaps predominating, while, seen from above, every plant shows its latest and freshest growths in perfection.

On returning to Glasgow after an inspection of the parks, the aspect of George's Square, in front of the magnificent facade of the Corporation Buildings, appeared to me as incomprehensible. The design consists of a series of unrelieved flat parterres, which, though well kept in themselves, are fenced in with plain, commonplace iron railings of a cheap and common type, forming altogether an *ensemble* which is both unworthy of the site it occupies and the pile of stately buildings which overlooks it. *Chas. T. Druery, V.M.H., F.L.S.* [Fuller particulars of the Glasgow Parks were published in *Gardeners' Chronicle*, November 23 and 30, 1901.—Ed.]

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

A PINK-FLOWERED CLOVE CARNATION.—In reference to the note on this subject by Mr. Dean on p. 172, there is a variety known as the "Blush Clove," but the flower described by Mr. Dean appears to be of a deeper pink colour than this. The "Blush" is a true Clove variety, identical in every respect with the type except in its colour. It is quite possible, however, that soil and situation may influence the colouring of these flowers, just as soil and cultivation effect changes in the flowers of the well-known Enchantress Carnation. The true Clove-scented Carnation does not appear to be much given to sporting, though occasionally white-striped petals are seen among the crimson ones. There is a white variety known as Old White Clove, and which I have never known by any other name. There is also the well-known Gloire de Nancy, which is, perhaps, the finest white Clove



FIG. 79.—FLOWER RACEMES OF CLADRASTIS TINCTORIA.

The flowers, which may be seen illustrated at fig. 79, are produced in June on pendant racemes, about 1 foot in length (occasionally half as long again). They are white, with a yellow spot at the base of the standard petal. The individual flower resembles that of *Robinia pseudacacia*, but the entire raceme is much longer and more lax.

There are few groups of hardy trees more interesting and attractive in gardens than the arborescent members of the Leguminosæ, and the Yellow Wood is far from being the least effective of them. At Kew its foliage nearly

the principal ones. In all, these parks and open spaces occupy 1,226 acres. The latest acquisition, Rouken Glen Park, of an area of 135 acres, was presented by A. Cameron Corbett, Esq., M.P. This park presents the most picturesque effects, its main feature being a deep ravine traversed by a stream of water, which, at no great elevation from the entrance, and at the head of a short and easy ascent, forms a series of splendid cascades (see fig. 80), spanned near the top by a one-arched bridge, beyond and through which the last and widest cascade of the series is seen as a picturesque watery curtain.

in cultivation, and which is quite distinct from the Old White Clove in flower and foliage. Mr. Dean refers to the perfect health of the plants of which he speaks, and this causes one to inquire why town-grown plants of these Carnations are so frequently seen in such fine condition, whilst garden or nursery-grown plants are frequently diseased. The reason, perhaps, is to be found in the excessive or high cultivation sometimes afforded them, and which appears unsuitable to such robust-growing plants. *E. H. Jenkins.*

Sports from the old crimson Clove Carnation have occurred at various times. Some years ago, probably 15 to 18 years, when Messrs. Heath Brothers cultivated the Clove Carnation extensively for market purposes, they had a large stock of a blush-pink variety, similar to that referred to by *A. D.* on p. 172. Mr. H. B. May also had plants of this variety, and many plants were sold by Mr. May to other nurserymen. When the maggot proved destructive, market growers gave up the culture of these flowers, and I have not seen the Blush Clove now for at least 10 years. It was known by no other name than "Blush." A striped variety, with markings similar to those seen in the "Malmesbury" Carnation Lady Middleton, also existed. The white variety referred to by *A. D.* is named Gloire de Nancy, and is one of the most powerfully-scented Carnations I am acquainted with, and it should prove a valuable variety for hybridising, for it possesses great vigour, large flowers, and a beautiful fragrance. It is, however, purely a border variety, and produces flowers from the previous year's growths only. The old crimson Clove Carnation was formerly grown extensively under glass for early flowering, and the blooms sold for almost as good prices as the best American varieties realise now. A year or two ago it was difficult to find healthy plants, but when recently visiting Messrs. H. B. May & Sons' nurseries I found that they had a large stock of the old crimson variety, and also of Gloire de Nancy quite free from the maggot. The best plan for combating this troublesome pest is to give the roots frequent applications of clear soot water, or to syringe the plants with quassia-extract during the summer and autumn months. *A. H.*

I have reason to believe that the pink form originated with Mr. G. Woodgate, when he had charge of the Warren House Gardens, Kingston Hill. I purchased some layers from Mr. Woodgate, when he was selling the plants at the time of the breaking-up of the establishment, following the death of Lady Wolverton, about 12 years ago. I understood from him that the sport was one from the old dark-coloured Clove Carnation. *C. Young, Gardener to W. St. Q. Leng, Esq., Welford Park, Newbury.*

THE SHREWSBURY SHOW.—The time allowed for judging the Grapes in the Champion Class at Shrewsbury was too short. To register accurately the standard point value of 132 bunches of Grapes in the short space of 120 minutes, and, at the same time, maintain the proper relative value by comparison from top to bottom of this number of bunches, and all open to public criticism by experts and others, is not altogether a light business for two men. *D.* wrote on page 172:—"Should a new challenge vase be provided for a champion Grape class, the vase should be made rather more difficult to win than it has been hitherto, and to that end I would suggest that no award be made of the vase except at least six of the bunches shown secure maximum points." Had such conditions been in force, the last vase would not have been won once to this date under the present pointing code. To extinguish a competitor's chance of obtaining the highest award unless he can stage six absolutely perfect bunches is unreasonable. One hears of certain competitors who are rather low down in the scale, and who wish to bring into use the decimal system; but even if this were done, the result would work out exactly the same, and would not assist anyone to creep in at the side door. *W. Crump, Madresfield Court Gardens.*

VERBENA MAHONETI.—Respecting *F. M.*'s enquiry about *Verbena Mahoneti*, p. 173, a plant of this variety of *V. tenera* was displayed in an exhibit staged by Messrs. Heath & Son, Cheltenham, at the show of the Royal Horticultural Society of Ireland, held in Dublin, on August 27. It is, I believe, a native of the Pyrenees. *E. Knowlton, Dublin.*

AN AMERICAN LAWN SWEEPER.—I have not seen Mr. Challis's lawn sweeper in operation, but recently, in Mrs. Budgett's park at Guildford, I saw a lawn cleaner of American construction which could easily be worked by a boy, as it was very light in weight. It collected leaves and other refuse on the turf remarkably well by means of toothed rakes and a rapidly revolving fan which creates a strong current of air. Behind the fan is a bag-like receptacle into which the refuse is cast, and should the wind be strong, a cover can be fixed over the bag. A special recommendation is that the price for such a machine is moderate. No sweeper with a broom could do the cleaning so rapidly or so well as this simple contrivance. It is known as the Pennsylvania Lawn Cleaner. *A. D.*

SOME NEW VARIETIES OF HEMEROCALLIS (DAY LILY).—I have bloomed this summer three varieties of these interesting and generally free-flowering Amaryllids. All of them are of Continental origin, two coming from Herr Sprenger, of Vomero, near Naples, and the third from M. Lemoine, of Nancy, in France. One of the Neapolitan hybrids was named *Fulva-Cypriana*, a most distinct and beautiful variety, with regularly-formed flowers that expand well. In colour they are of a clear brown shade, with a clearly-defined and slightly raised yellow midrib down the centre of each of the alternate petals. This is



FIG. 40.—WATERFALL IN ROUKEN GLEN PARK, GLASGOW (see page 187.)

one of the most beautiful *Hemerocallis* known to me. The second was named *Ful-Citrina*, and is a comparatively dull and worthless variety, with flowers of thin texture. The French seedling is named *luteola-pallens*, being probably either a sport or seedling from the same raiser's beautiful hybrid distributed some few years ago under the name of *luteola*, and which, curiously enough, is identical with one of Herr Sprenger's hybrids sent out under the name of *Parthenope*. The new French hybrid is distinctly good, with large, well-formed flowers of a pale shade of canary yellow. *W. E. Gumbleton.*

SCHOOL GARDENS AT LEYTON.—Excellent work has been done at Leyton, Essex, by the establishment of gardens for the boys in the elementary schools under the control of the Urban District Council. The chairman of the Education Committee, Mr. J. B. Slade, who is widely known in the horticultural world as one of the partners in Messrs. Protheroe and Morris, has taken a prominent part in the initiation of the scheme, and he has had the cordial support of Mr. Thomas Tiley, the Organising Inspector of Schools, who takes a great interest in the matter. The practical supervision of the work has been entrusted to the energetic Superin-

tendent of Parks and Open Spaces in Leyton, Mr. K. J. Frogbrook, who ably carried out the work of preparatory cultivation and general planning of the gardens, with the system of cropping and all essential technical details. The instruction of the boys has been mainly left with the school teachers who have passed an examination in horticulture; with, of course, reference to Mr. Frogbrook in all cases of difficulty. In 1906 a beginning was made with six classes, but this season there are 11 classes at different schools, each comprising 16 boys. Every student and worker is allowed about a square pole of ground, and under the direction of the teacher or superintendent, performs the whole work of digging, trenching, sowing the seeds, staking, hoeing, watering, etc. The seeds, tools, stakes, and manures are provided by the Urban District Council, but a large part of this expense is defrayed by the Board of Education grant to each school. The boys are allowed to have the whole of the produce, and they thus receive a material reward for their labour, which is greatly appreciated. On Saturday last (Aug. 31) the first competitive exhibition of the school garden vegetables and flowers was held at Leyton, when 11 classes were provided (one for each school), and 14 boys contributed collections of vegetables or bunches of flowers. The competition was thus confined in every case to the workers on each particular group of gardens, and the schools were not pitted against each other. Three prizes were offered for every school, and the general quality of the exhibits was alike creditable to the teachers and the pupils. The judges adopted a system of pointing throughout, and the results were highly satisfactory; for example, taking the 11 classes, the first prize-winners secured an average of 72 per cent. of the possible total points, in one case rising to 90 per cent. of the total. The second prize-winners averaged 67 per cent., and the third prize collections secured 66 per cent. of the total points. There was considerable difference in the standards of the various schools, but some have much less favourable soils and situations for the gardens than others, hence the reason for judging them all separately. Considerable local interest is taken in the scheme, and a large crowd assembled at the distribution of prizes in the afternoon, when Mr. J. B. Slade addressed the winners in an admirable commendatory, encouraging, and instructive speech. That such work as this, on the right lines, is of inestimable service in many directions was amply demonstrated to the judges by the exhibits, and by the subsequent inspection of the well-kept gardens attached to the schools. Another season's course of instruction is about to be commenced, and the desire to be amongst the fortunate lads selected to form the class acts as a considerable incentive to good conduct. *R. Lewis Castle.*

EUCRYPHIA PINNATIFOLIA.—Whilst spending a holiday recently in Cornwall I visited the gardens of Trewidren, the residence of T. B. Bolitho, Esq., especially to inspect a plant of *Eucryphia pinnatifolia*. This specimen, probably the finest in the country, measures roughly 30 feet in height and 15 feet in width, and at the time of my visit it was a mass of flowers. The tree was planted some years ago by the present gardener, and no check has since marred its progress. I regret no means were at hand for my obtaining a photograph of this beautiful tree. *A. Bullock, Copped Hall Gardens.*

THE SOWING OF CYCLAMEN SEED.—Like Mr. Fulford (see p. 172), I prefer to sow in August, but there were no Cyclamen plants here at the time I engaged about 12 months since, and I intend to flower Cyclamen next Christmas that have been raised from seeds sown on February 16 last. I have two dozen plants in 5-inch pots. They are well-rooted, and have about two dozen leaves on each plant; flowers, in most instances, being already observable. The seeds were sown in a lean-to structure, in which the atmospheric temperature was 55° at night and 60° to 65° by day. The plants have since been kept on a shelf near to the glass; no fire heat has been employed during the past month, although the sun only shines on the house from 10 a.m. to 4.30 p.m. The compost I used was similar to that recommended by Mr. Fulford, except that in place of the bone-meal I used burnt ashes. About five years ago, at a Gardeners' Improvement Society, I heard a lecturer say that if

Cyclamen seeds were sown in February, the resulting plants could easily be abundantly flowered in December. *W. Ettey, St. Clements, York.*

THE BLACK CURRANT GALL MITE.—During 1905-6 and 7 I have gratuitously distributed upwards of 3,000 reports to different fruit growers in the British Isles, giving particulars of the lime and sulphur treatment for the Black Currant Gall Mite. Many of these growers have since written me and stated that "the cure recommended has proved most successful," or "we are entirely free from 'Big Bud' now." I propose issuing, shortly, a further report upon this subject in which many of these reports will be incorporated and I invite all growers who have tried this remedy to write me stating upon how many acres, or bushes, they have tried it, with what result, and if they have any objection to their report being published with the others (not necessarily with their name and address). *Walter E. Collinge, University of Birmingham, Dept. of Economic Zoology, Birmingham.*

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 3.—The display of flowers and fruits at the fortnightly meeting on Tuesday last was well up to the average for this season of the year. An outstanding feature was a collection of hardy Bamboos in about thirty varieties and species shown by Messrs. JAS. VEITCH & SONS. Dahlias reminded visitors of the approaching autumn, and one exhibit of these flowers was of especial merit.

Several good displays of fruits were seen. Among the Orchid exhibits were several meritorious groups; the most noteworthy being a group of six plants of *Lissochilus giganteus*, shown by the Hon. WALTER ROTHSCHILD.

Novelties were plentiful amongst flowering plants, and the FLORAL COMMITTEE awarded no fewer than twelve Awards of Merit, of which four were given to varieties of Dahlias.

The ORCHID COMMITTEE granted two First-Class Certificates, three Awards of Merit, and one Botanical Certificate.

The FRUIT and VEGETABLE COMMITTEE made no award to a novelty.

At the afternoon meeting nine new Fellows were elected, and a paper on "Lesser Known Orchids," illustrated by lantern slides, was read by Mr. F. W. Moore, Glasnevin.

Floral Committee.

Present: W. Marshall, Esq. (Chairman); and Messrs. Henry B. May, Chas. T. Drury, Geo. Nicholson, T. W. Turner, W. Cuthbertson, H. J. Jones, Chas. Dixon, W. Bain, A. Turner, W. Howe, R. C. Notcutt, R. Hooper Pearson, and C. R. Fielder.

Messrs. H. B. MAY & SONS, Edmonton, showed a miscellaneous collection of greenhouse flowering plants, interspersed with decorative varieties of Ferns. The exhibit included *Ixora aurantiaca*, *Solanum jasminoides*, *Campanula isophylla*, *Heliotropes*, a variegated-leaved *Oleander*, and the white-flowered variety *Madonna*; *Abutilon Boule de Nieve* and others; *Statice profusa*, *Swainsonia*, *Lobelia cardinalis*, *Bouvardias*, &c. (Silver-Gilt Banksian Medal.)

LORD ALDENHAM, Elstree, Herts. (gr. Mr. Edwin Beckett), filled the side of one table with vases of Pentstemons. The range of colouring in the varieties was very wide—some were almost pure white, and others dark crimson, with varieties of most of the intermediate shades. The strain is exceptionally fine, and the culture of the flowers was of the highest excellence. (Silver-Gilt Flora Medal.)

A remarkable collection of Bamboos and allied plants was displayed by Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea. There were more than 30 varieties and species in this group, some of which, including *Arundinaria japonica* and *Phyllostachys Quiloi*, were over 10 feet in height. Amongst the rarer species we noticed *Bambusa angustifolia*, *Arundinaria nobilis*, and *Phyllostachys Castillonis*. Two of the showiest were *Arundinaria Fortunei* variegata and *A. auricoma*. In another part of the Hall, Messrs. VEITCH exhibited large plants of *Senecio clivorum*, *Aconitum Wilsoni*, and *Artemisia lactiflora*. (Gold Medal.)

Messrs. W. PAUL & SONS, Waltham Cross,

Herts., showed an excellent collection of Roses. The flowers were arranged in a setting of moss in baskets, an arrangement that was pleasing and that enabled the varieties to be critically examined. A new variety was exhibited under the name of Mrs. Dudley Cross. The blooms of this new Rose are cream-coloured, with a suffusion of rose in the older flowers. The buds are yellowish. Amongst the best of the older kinds were Frau Karl Druschki, Caroline Testout, Liberty, Mme. Jules Grolez, Madame Leon Pain, and Marie van Houtte. (Silver-Gilt Flora Medal.)

Messrs. FRANK CANT & Co., Colchester, displayed an assortment of Roses, some of the best blooms being those of Irish Elegance, Mrs. R. G. Sharman Crawford, Dupuy Jamain, Mad. Abel Chatenay, Commandant Felix Faure, and Ulrich Brunner. (Silver Banksian Medal.)

Messrs. W. CUTBUSH & SONS, Highgate, London, N., exhibited vases of Carnations of the choicer varieties of the American or winter-flowering type. The blooms were of exceptionally good quality. (Silver Flora Medal.)

Messrs. G. STARK & SON, Great Ryburgh,

Phloxes, of such beautiful varieties as *La Sylphide*, *Tapis Blanc*, *Leonardo de Vinci*, *Esperance*, *Sheriff Ivory*, *Iris*, *F. von Lassberg*, *Coquilicot*, *Josephine Gerbaux*, *Crepuscule*, &c. (Silver-Gilt Banksian Medal.)

Misses E. & M. KIPPING, Hutton, Essex, displayed a small group of hardy flowers.

Mr. J. SPENCE, Wycliffe House Gardens, Guildford, exhibited *Alyssum maritimum*, with the notification that it was the original variety raised by the exhibitor's father many years ago.

Messrs. KELWAY & SON, Langport, Somerset, again exhibited a very excellent display of Gladioli, in all some 200 flower-spikes, representing more than 100 varieties. Marquess of Northampton (rose colour) and Purity (white) were two of the finest amongst this excellent collection. (Silver-Gilt Flora Medal.)

Mr. H. J. JONES, Ryecroft Nurseries, Hither Green, Lewisham, showed a group of hybrid Fuchsias, apparently crosses between *F. triphylla* and *F. fulgens*. They were freely flowered in small pots, and included varieties with flowers of scarlet, rose, and other shades of red. (Bronze Flora Medal.)



FIG. 81.—LYCHNIS GRANDIFLORA: COLOUR SALMON-ROSE.

Norfolk, showed vases of Sweet Peas that were interspersed with named varieties of Tropæolums.

Mr. AMOS PERRY, Enfield Chase, London, N., showed well-cultivated hardy flowers, including most of the best kinds in season. We noticed some good forms of *Lychnis Haageana*, some handsome spikes of *Liatis pycnostachya*, *Lilium auratum* in variety, sturdy *Tritomas*, a basket of the handsome *Stokesia cyanea præcox*, &c. (Silver-Gilt Banksian Medal.)

Messrs. T. S. WARE, LTD., Feltham, exhibited seasonable hardy flowers, amongst which were many showy Composites. (Silver Banksian Medal.)

Messrs. G. BUNYARD & Co., Maidstone, also showed a display of garden flowers, of such kinds as *Montbretias*, varieties of *Lobelia*, *Gladioli*, *Lilium tigrinum*, and others. (Silver Banksian Medal.)

Messrs. GUNN & SONS, Olton, Birmingham, displayed a large and varied collection of garden

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, showed varieties of hardy Fuchsias, many of which are suitable for summer bedding. Interspersed amongst the Fuchsias were small, freely-flowered plants of Clematis, and a number of Eleagnuses, with showy foliage. (Silver Banksian Medal.)

Messrs. W. BULL & SONS, King's Road, Chelsea, showed ornamental stove and greenhouse foliage plants in variety, the group being enlivened with choice Orchids in flower. (Silver Banksian Medal.)

Mr. LL. GWILLIM, Cambria Nurseries, New Eltham, Kent, staged a large exhibit of flowers of tuberous rooting Begonias. They were shown in batches of one colour, with suitable greenery intermingled amongst them; the whole formed a very attractive display. (Silver Flora Medal.)

Messrs. JARMAN & Co., Chard, showed their improved varieties of Centaures in white, heliotrope, light-yellow, and dark-yellow colours. (Bronze Flora Medal.)

Messrs. W. WELLS & Co., Merstham, Surrey, exhibited plants of early-flowering Chrysanthemums. (Bronze Flora Medal.)

Several exhibits of Dahlias were staged. A magnificent collection of these flowers was put up by Messrs. CARTER, PAGE & Co., London Wall, London. This firm showed examples of all the types—single, cactus, show, pompon, &c., in many of the newer and the best of the older varieties. The blooms were arranged in baskets, epergnes, and vases, with sprays of Ampelopsis and tall vases of Grasses, small Palms, &c., between them. (Silver-Gilt Flora Medal.)

Mr. H. SHOESMITH, Westfield, Woking, Surrey, also showed varieties of this seasonable flower, the cactus-flowered varieties being especially fine.

Dahlias were also shown by Messrs. JOSEPH CHEAL & SONS, Crawley, Sussex. This firm exhibited a number of new varieties, the best of which is described under Awards. As a background to the Dahlias, were vases of choice, hardy flowers. (Silver Banksian Medal.)

AWARDS OF MERIT

were made to the twelve plants stated below:—

Arctotis regalis.—This *Arctotis* is described as a hybrid from *A. aureola* (orange-coloured) and *A. grandis* (white, with mauve colour on the exterior of the segments). *A. regalis* is a larger flower than either of the reputed parents; the blooms are pure white, with purple anthers, and narrow band of yellow immediately around the disc. On the exterior of the segments there is a slight tinting with pale purple. The flowers have erect stems, more than 1 foot in length. Shown by Sir TREVOR LAWRENCE, Bart. (gr. Mr. W. Bain).

Canna Madame Louis Voraz.—A large, yellow-flowered variety, richly veined with red, almost in circles, the red colour becoming confluent in the lower segments. Shown by Sir TREVOR LAWRENCE, Bart. (gr. Mr. W. Bain).

Carnation Mrs. T. Coulthwaite.—This is a first-class white border variety, with non-splitting calyx. It has an exceptionally free habit, and the flowers are fragrant. Shown by Mr. P. BLAIR, Trentham.

Dahlia "Alice".—This is a white decorative flower of the "Cactus" type with a little lemon colour showing at the base of the segments towards the centre of the flower. It is too small for exhibition purposes, but, having good, stiff stems, will be a useful decorative Dahlia.

D. "Mauve Queen".—An exhibition Cactus-flowered Dahlia, coloured mauve with white centre.

D. "Peggy".—This single Dahlia is remarkable for its colouration. The tips of the floral segments are purplish-rose, but this is followed a little lower down by orange, and at the base the colour is rich rosy-crimson, the effect being, therefore, one of purplish-rose, orange, and crimson in circles. The three varieties just described were shown by Messrs. J. CHEAL & SONS.

D. "Elsa Ellrich".—In this variety cultivators will find a large-flowered, exhibition, Cactus Dahlia of good form, and rich yellow colouring throughout. Shown by Mr. H. SHOESMITH.

Fuchsia "Coralie".—A variety obtained from *F. triphylla*, or possibly a hybrid from this species and *F. fulgens*. The flowers are 1½-inch long, and are produced in good clusters. The calyx lobes are short, as in *F. triphylla*, and the petals are even shorter. The colour is pale, or salmon red. This variety and other similar ones have been introduced from Germany. The present specimen was shown by Mr. H. J. JONES.

Gaillardia grandiflora, variety *Lady Rolleston*.—This is a magnificent variety of the species. The flowers are rich yellow-coloured throughout, and are 4 inches in diameter. They are produced on erect stems 2 feet or more in length. Shown by Messrs. HARRISON & SONS, Leicester.

Gladiolus Purity.—A large-flowered white variety, very slightly marked with purple, and having a suspicion of pale yellow on the lower segments. It is one of the best white varieties we have seen. Shown by Messrs. KELWAY & SON.

Lychnis grandiflora.—Mr. AMOS PERRY showed plants of this species, which is a native of China and Japan, and of which an illustration is reproduced at fig. 81. Mr. PERRY's plants are said

to have been collected in Thibet, and there were four distinct varieties, each of which differed in its degree of merit as a garden plant. One form had orange-coloured flowers, and the petals were divided in much the same manner as shown in the illustration. The type, however, selected for receiving the Award of Merit had flowers 3 inches in diameter, with large, overlapping petals of rosy-crimson colour. The plants grow to a height of 2 feet or more, but for some unexplained reason the species has, until the present, remained in cultivation in this country only for short periods, although it was introduced more than a century ago, and on several subsequent occasions. The type that was granted an Award of Merit on Tuesday last is probably the largest-flowered variety so far observed.

Pentstemon.—An excellent strain shown by Lord ALDENHAM.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair); and Messrs. Jas. O'Brien (hon. sec), Harry J. Veitch, H. Little, W. Boxall, F. W. Moore, W. P. Bound, A. Dye, H. T. Pitt, W. Cobb, J. Charlesworth, W. H. White, H. G. Alexander, H. A. Tracy, W. A. Bilney, F. Peeters-Carter, and W. Botton.

The exhibits of Orchids were very interesting, and especially a group of splendidly-grown plants of *Lissochilus giganteus*, for which the Hon. WALTER ROTHSCHILD, Tring Park, Tring (gr. Mr. A. Dye), was awarded the Silver-Gilt Lindley Medal. The group was composed of six fine plants, furnished with bright green plicate leaves and bearing between them nine flower-spikes, each about 7 feet in height, the individual spikes having from 20 to 30 flowers. The prominent bracts and reflexed sepals were green, tinged with purple; the orbicular-shaped, bright rose petals and massive lip forms the showiest feature. The lip varies in tint from light rose to pale violet, with a distinct whitish callus. The plants are grown at Tring as semi-aquatics until the flowers appear, when they are allowed to develop in a warm plant house in a similar manner to the allied *L. Horsfallii*, illustrated from the Tring Park specimens in the *Gardeners' Chronicle*, March 31, 1906. The species exhibited is a native of tropical Africa, the plants being imported from the Congo (see fig. in *Gardeners' Chronicle*, May 19, 1888, p. 617).

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, were awarded a Silver Flora Medal for a showy group of Orchids, principally hybrids, the centre of the exhibit being occupied by the superb *Cattleya Iris His Majesty* (see Awards). The group also contained a plant of the pretty new, lilac-tinted *Brasso-Cattleya Ena* (*C. Lawrenceana* × *B. Digbyana*); a good selection of *Lælio-Cattleya Bletchleyensis*, *L.-C. Dominiana*, *L.-C. Parysatis*, *L.-C. Wellsiana*, *Brasso-Lælia Digbyanopurpurata*, *Brasso-Cattleya Digbyano-Warscewiczii*, *Cypripedium Jas. H. Veitch*, and other *Cypripediums*.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, were awarded a Silver Flora Medal for a pleasing group, in the centre of which was a selection of their fine type of *Cattleya Iris*. Around these were plants, including a good white form of *C. Gaskelliana vestalis*, *C. atalanta*, *C. Mrs. Pitt*, *C. Fowleriana*, and various showy *Lælio-Cattleyas*. At one end of the display were several finely-bloomed *Ancistrochilus Thompsonianus*, var. *Gentilii*, strong specimens of *Miltonia vexillaria Leopoldii*, *M. v. robusta*, *M. spectabilis Moreliana*, *Odontoglossum Rolfeae*, and other *Odontoglossums*; a specimen of *Brasso-Cattleya Digbyano-Warscewiczii*, with three well-developed flowers on one spike. Among the species was the remarkable *Cirrhopetalum ornatissimum*, with a spray of singular flowers having fringed dorsal sepals and petals. We also noticed *Bulbophyllum Godseffianum*, a well-grown specimen of *Epidendrum prismatocarpum*, the fine *Cymbidium erythrostylum*, *Vanda Kimballiana*, &c.

Messrs. SANDER & SONS, St. Albans, received a Silver Flora Medal for a group of Orchids, in the centre of which was a selection of their new *Cattleya Davidii* (*velutina* × *Hardyana*), the varieties varying much in the pretty rose, bronze, and purple flowers, the varieties *rubra* and *aurea* being the best. On either side of the group were selections of *Lælio-Cattleya Bletchleyensis*, *L.-C. Henry Greenwood*, and

other hybrids. *Cattleya Ethelreda* (*O'Brieniana* × *Dowiana*) has pretty blush-white flowers, with deflected, rosy-purple lip; *Lælio-Cattleya Magnæi* (*L. tenebrosa* × *C. granulosa*), has long, cream-white sepals and petals that are veined with purple, and having an elongated purple labellum. *Odontoglossum blandomobile* has pretty white flowers that are spotted with purple. Various *Cypripediums* and other hybrids were included in the display.

Messrs. HUGH LOW & Co., Enfield, were awarded a Silver Banksian Medal for an exhibit that contained *Cattleya Gaskelliana alba*, *C. Parthenia* "Prince of Wales," *C. bicolor*, two dwarf specimens of the yellow *Sobralia xantholeuca nana*, *Oncidium oblongatum* and its variety *citrinum*, which has yellow flowers without bars of brown on the sepals, *Cypripedium Gowerianum magnificum*, *C. vexillarium*, and other *Cypripediums*.

Major G. L. HOLFORD, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), showed *Brasso-Cattleya Madame Hye*, *C. Iris*, Holford's variety, a very handsome form; a good *Oncidium Jonesianum*, and cut spikes of a fine *Vanda Sanderiana*.

Messrs. ARMSTRONG & BROWN, Tunbridge Wells, showed a small group. The new *Cattleya Armstrongiae* (*Hardyana* × *Loddigesii violacea*), a pretty rose-coloured flower, with orange centre to the lip, which has a rose-purple blotch on front, was noticed; also *Cattleya Iris inversa*, with bronzy sepals and petals and rich purple lip; *Cattleya elatior*, *C. Madame Hye*, *C. fulvescens*, and a pretty hybrid between *C. Percivaliana* and *C. Schilleriana*.

Messrs. STANLEY & Co., Southgate, staged plants of *Cattleya bicolor*, *Lælio-Cattleya elegans Harrisii*, a variety having large, rich, purple-tinted flowers; and the singular *Brassavola cucullata*.

Messrs. HOOLEY BROS., Bitterne Park, Southampton, sent a flower-spike of *Cattleya granulosa* with 10 blooms.

H. T. PITT, Esq., Rosslyn, Stamford Hill, showed *Cattleya Hardyana* Countess of Derby, a superb white-petalled form with intense ruby-crimson lip, and which had previously received a First-Class Certificate as *C. Warscewiczii* Countess of Derby.

JEREMIAH COLMAN, Esq., Gatton Park (gr. Mr. W. P. Bound), displayed a clear yellow form of *Brasso-Lælia Fladosa* (*L. flava* × *B. nodosa*); the pale yellow, fringed-lipped *Chondrorhyncha Chestertonii*, and the singular *Cirrhopetalum appendiculatum*.

WALTER COBB, Esq., Rusper (gr. Mr. C. J. Salfer), showed *Lælio-Cattleya Iris*, *Dulcote* variety, and *L.-C. Ashtonii*.

Mr. MAURICE MERTENS, Ghent, showed *Odontoglossum Rolfeae magnificum*, a very large and finely-formed flower.

AWARDS.

FIRST-CLASS CERTIFICATES.

Cattleya Iris His Majesty (*bicolor* × *aurea*), from Messrs. JAS. VEITCH & SONS, LTD., Chelsea. This is probably the finest form of *C. Iris* ever shown, and a remarkable reversion towards *C. aurea* both in size and colour. The specimen carried three very large flowers, the broad sepals and petals having a yellow ground colour tinted outward with an old-gold tint and shaded with bronze, passing to sulphur yellow towards the margin. The base of the lip is yellow, with red lines running into the centre, which is marked with orange. The broad front lobe is coloured a rich ruby-crimson. It was originally raised by Messrs. CHARLESWORTH & Co., who also were voted a First-Class Certificate for the plant, but the Award was withdrawn as a painting of the flower was not secured.

Brasso-Lælio-Cattleya Rowena (*L.-C. Doris* × *B. Digbyana*), from Major G. L. HOLFORD (gr. Mr. H. G. Alexander). A very fine flower, and a good addition to the hybrids of *Brassavola Digbyana*, especially on account of the bright colour of its flowers. The flower approaches in size and shape that of *Brasso-Cattleya Digbyano-Mossiae*, but the fringe on the lip is not so deep as in that variety. The colour is a clear, light yellow, with some emerald green lines at the base of the lip.

AWARDS OF MERIT.

Stanhopea platyceras, from the Hon. WALTER ROTHSCHILD, M.P. (gr. Mr. A. Dye). A very handsome and rare species, and one of the largest of the *Stanhopeas*. The broad, rather

concave sepals are cream-white, and closely dotted with purple; the narrower, recurved petals are also cream-white, but tinged with rose and spotted with purple. The long, boat-shaped hypochil has a whitish base that is heavily tinged and spotted with blackish-purple. The horns of the middle portion of the lip are broad and flat, and they form a distinguishing feature for the species, and, like the fleshy epichil, are white spotted with purple.

Cattleya Hardyana var. *Madame Valcke*, from Monsieur A. A. PEETERS, Brussels. A charming variety, with white sepals and petals, the lip being somewhat like that of a light form of *C. Warscewiczii*; the colour is rose, with a yellow patch on either side of the tube, and a broad pale lilac margin.

Sophro-Lalio-Cattleya Phyllis (Sophro-Lælia læta × *C. Lawrenceana*), from Major G. L. HOLFORD. A hybrid of dwarf habit, and with pretty rose-purple coloured flowers, having a claret-purple front to the labellum. The flowers are of good size and shape.

BOTANICAL CERTIFICATE.

Eulophia ensata, from the Hon. WALTER ROTHSCHILD. An African species, with lanceolate, plicate leaves and tall inflorescence, bearing a dense head of pale yellow flowers: the lip has a hairy orange-coloured crest. The species is figured in the *Botanical Register*, t. 1147.

Fruit and Vegetable Committee.

Present: G. Bunyard, Esq. (chairman); Messrs. Jos. Cheal, W. Bates, W. Pope, H. Parr, Horace J. Wright, H. Markham, Jno. Lyne, Owen Thomas, Chas. Foster, J. McIntosh, W. Poupert, W. Wilks, J. Vert, Geo. Woodward, J. Davis, and A. R. Allan.

A fine collection of fruiting trees in pots was shown by the KING'S ACRE NURSERY CO., Hereford. Especially fine were espalier trees of Peaches, the variety Sea Eagle being freely fruited. Thos. Rivers Peach was also shown fine fruited, and another tree heavily cropped was *Violette Hative* Nectarine, although the fruits were small in size. Trained vines in pots of Gros Maroc, Black Alicante, Lady Hutt, Alnwick Seedling, and others were staged at the back of the exhibit. The specimen of Alnwick Seedling was one of the best cropped pot vines we have seen. The exhibit also included Apples Cox's Orange Pippin, James Grieve, Worcester Pearmain, and Washington; Late Orange Plum, Conference, Marguerite Marillat, and other Pears, with tall plants of Red Currants, and small trees of Figs. (Silver-Gilt Hogg Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, staged a collection of hardy fruits. At the back of this exhibit were Apples and Pear trees in pots, all of which had been grown in the open. Boxes of Plums, including the varieties Bryanton Gage, McLaughlan's Gage, Oullin's Golden Gage, and a very finely flowered red Gage, which is probably a new variety of merit. A row of large, well-finished Apples formed a suitable finish to the group. The varieties of Apples included Red Quarrenden, Red Astrachan, Duchess of Oldenburg, Worcester Pearmain, and Lady Sudeley. Messrs. CANNELL showed a new Apple, labelled Cannell's Market. It is a prolific cropper—as many as 24 fruits were exhibited on a small branch, and these ripen early in the season. (Silver-Gilt Knightian Medal.)

Messrs. JAMES VEITCH & SONS, LTD., Chelsea, showed 50 trained fruit trees in pots. The best specimens were those of Pears and Plums. An excellent example of Belle de Louvain Plum was afforded a prominent position. Purple Gage and Cox's Emperor Plums were also heavily cropped. Trees of Beurré Jean van Geert and Marguerite Marillat Pears were carrying finely finished fruits of large size. The examples of Souvenir du Congrès, Charles Ernest and Conference Pears were also worthy of mention. Ben's Red Apple was highly coloured. Figs, too, were displayed in well-cropped examples, the best being Brown Turkey and Negro Largo. (Silver-Gilt Banksian Medal.)

Messrs. GEO. BUNYARD & CO., Maidstone, Kent, showed a miscellaneous assortment of fruits—Apples, Pears, Peaches, Apricots, Plums, Damsons, Nuts, and Cherries. Of Plums, we noticed White Magnum Bonum, the Burbank Plum (an attractive fruit in appearance), the Wickson Plum, Sultan, and Belle Louvain; Apples Lady Sudeley, Worcester Pearmain, and Red Quarrenden, all of which were coloured

highly; Duchess of Oldenburg, and very fine fruits of Stirling Castle. The best Pears in the group were Triomphe de Vienne, Williams' Bon Chrétien, Doyenné du Bossoch, and Marguerite Marillat. (Silver-Gilt Knightian Medal.)

Mrs. BRACE, Doveridge Hall, near Derby, showed a collection of hot-house fruits. A dish of Barrington Peaches was especially good. Bunches of Grapes, somewhat small, but with well-finished berries, formed a background to the collection, which included Peaches, Nectarines, Pears, Cherries, Figs, Plums, and Melons. (Silver Knightian Medal.)

The usual array of Seedling Melons was seen on the table devoted to novelties, but none was found worthy the distinction of an Award.

The curious Cucurbitaceous fruit known as Lemon Cucumber was shown by Messrs. BARR & SONS, King Street, Covent Garden, W.C. It was of ovoid shape, lemon-coloured, with a number of black dots, apparently rudimentary spines.

LECTURE ON LESSER KNOWN ORCHIDS.

The lecture at the afternoon meeting of the Fellows was by Mr. F. W. MOORE, Curator of the Glasnevin Botanic Gardens. The lecturer treated of Orchid giants, pigmy Orchids, species having some peculiar habit or structure, pendulous-growing varieties, Orchids of remarkable appearance, and others that are remarkable for requiring some special cultural treatment. Amongst the largest of Orchids is *Grammatophyllum speciosum* (illustrated in the last issue of the *Gardeners' Chronicle*), *Arachnanthe Lowii*, and the very rare *Eulophiella Peetersiana*. *Cyrtopodium Andersonii* bears an inflorescence that reaches a height of 4 feet 4 inches. *Cypripedium Lindleyanum* at Glasnevin developed leaves 2 feet 3 inches in length and 3½ inches in breadth, whilst the flowers were borne on inflorescences 4 feet 9 inches in height. *Arachnanthe Lowii* produced six inflorescences in the Glasnevin Gardens, each measuring 6 to 7 feet, and it is curious that this species produces dimorphic flowers, for the basal ones are quite different in shape and colour to those on the upper portions of the inflorescence. (See also *Lissochilus giganteus*, a gigantic species, figured in *Gardeners' Chronicle*, May 19, 1888, p. 617.—The inflorescences reach a height of 8 feet.—ED.)

Among pigmy Orchids, Mr. Moore enumerated *Pleurothallis asterophora*, *P. hypnicola*, *P. simmleriana*, and *P. lateritia*. *P. hypnicola* is one of the smallest of Orchids, its flowers being so inconspicuous that they can scarcely be seen. *Maxillaria funerea*, *Masdevallia nidifica*, and *Megacalinum minutum* are dwarf representatives of three other genera. The lecturer referred to the curiously-flowered *Arachnanthe annamensis*, which produced an inflorescence bearing eight to ten flowers, each 5 inches in length and with transverse bars of yellow on a red ground (see fig. in *Gardeners' Chronicle*, May 12, 1906, p. 290). Some of the most curious adaptations of Orchids are to be found in their labellums. In some species this organ is fleshy, as in *Stanhopea*, and in others, such as *Brassavola*, it is hairy but fixed. In *Bulbophyllum*, however, it is not only hairy, but hinged, so that it moves with the slightest displacement of the air. *Bulbophyllum barbatum* is a well-known species, but *B. tremula* is not so commonly seen. It has a heavy fringe of hanging hairs, which give the plant a singular appearance. The curious habit of growth of *Masdevallia deorsa* was referred to, and Mr. Moore stated that this species refuses to grow in any other position than a pendulous one. *Lycaste Dyeriana* dies if it is not allowed to grow with its roots uppermost. The species was flowered at Glasnevin in 1896. A curious adaptation of growth is seen in *Epidendrum versicatum*; the leaves of this plant form a cup, the upper pair enclose the flowers and form a sealed chamber, so that were they pointing in the normal upward position, the flower-spike would become rotted owing to the presence of water.

Other species of Orchids which require a pendulous position are *Brassavola nodosa*, *Cattleya citrina*, and *Scutecaria Steelii*. In opposition to this habit of growth are varieties which must be grown in a perfectly upright position, with their growths erect. *Coleogyne triplicatula*, when planted in an ordinary flat manner, refused to grow, but it was trained erect and it succeeded splendidly. It is a very scarce species, with brownish-yellow coloured

flowers, having darker lips, with marked keels. Some Orchids are self-fertile to a high degree, and of this class is *Dendrobium Brymerianum*, but, as is to be expected, the flowers of this plant are quite unimportant in appearance. *Cymbidium grandiflorum* (syn. *C. Hookerianum*) seldom opens its flowers, which are self-fertilised.

A curious plant is *Pleurothallis immersa*. The flower-spike appears to develop from the leaf blade about half-way up. There is a channel or tunnel in the leaf, and the growth is not contiguous. The usual appearance of an Orchid flower is with the lip in the lower position, but this is due to torsion in the ovary, and when, as in *Eria globifera*, the torsion is not present the lip is uppermost, and what is really the correct position of the flower appears abnormal.

The lecturer also referred to Orchids having a peculiar growth of pseudo-bulb and foliage, and showed lantern slides of some, including *Hexisia bidentata* and *Hexadnesia crurigera*. Mr. Moore stated that the genus *Maxillaria* contains several species with remarkable flowers, one of the most interesting being *M. fractiflexa*, which has curiously twisted sepals and petals (see *Gardeners' Chronicle*, May 31, 1902, fig. 125).

READING HORTICULTURAL.

AUGUST 28.—The annual exhibition of this society was held in the Forbury Gardens on the above date. The number of the exhibits exceeded those of last year—the jubilee year of the society—and this necessitated the provision of larger tents.

Outstanding features of the show were the exhibits of vegetables and fruit, and especially the collection of vegetables shown by Mr. James Dymock (gr. to GEO. D. FABER, Esq., of Wallingford), in the class for ten kinds of vegetables, the prizes being offered by Messrs. Sutton & Sons. The 1st prize in the class for six varieties of vegetables was won by Mr. George Ellwood (gr. to Mr. W. H. MYERS, Bishop's Waltham, Hants.), but there was not much difference of quality between this exhibit and that of the 2nd prize-winner, Mr. A. Basile (gr. to the Rev. THOMAS McMURDIE, Weybridge). In the cottagers' classes the produce was exceedingly well grown, Potatoes especially. Fruit was good considering the backward season. Exhibits of Grapes were of moderate quality, the best were shown by Mr. J. WILLIS FLEMING, of Romsey (gr. Mr. Mitchell). The same remark applies to Peaches, the exception being a fine dish of "Golden Eagle," shown by S. MONCK, Esq., Coley Park (gr. Mr. A. J. Booker). Nectarines and Plums were of good quality, but Pears and Apples lacked colour.

The class for a group of plants arranged for effect produced four good groups. The 1st prize was taken by EDWARD WAGG, Esq., of Maidenhead (gr. Mr. D. Phillips). Lady Cooke secured the 2nd prize for a group that was somewhat crowded, but the plants were well-grown specimens. Fuchsias made a good display; those shown by Mr. J. FRIEDLANDER, of Whiteknights, were considered the best, but those shown by Miss K. RATCLIFFE, Westfield, Reading, were not far behind those of the 1st prize group in point of quality. Mr. WAGG won the 1st prizes for stove Ferns and for stove plants of a miscellaneous character with well-grown specimens; Mr. S. B. JOEL was an easy 1st prize-winner for tuberous Begonias in the open class. The decorative classes were somewhat disappointing, and there was a lack of originality. In the open classes for Dahlias, Mr. JOHN WALKER, of Thame, was very successful, taking three 1st prizes. In the Rose classes open to amateurs only, Mr. C. E. KEYSER, of Aldermaston, won the premier award; 2nd, Mr. H. W. DUNLOP, Earley.

The non-competitive exhibits formed a very attractive feature of the show. Messrs. POWELL & SONS, Bath Road Nurseries, Reading, were awarded a Silver Medal for a group of floral designs, foliage plants, &c.; Messrs. HICKS & BLOOMFIELD, Calcot Nurseries, Reading, received a Silver Medal for a display of Roses; Mr. T. RIGG, Caversham, was also awarded a Silver Medal for cut Roses; and Messrs. JAS. HOLLIER & SONS a Silver Medal for a group of plants, &c. Messrs. WEBB & SONS, Stourbridge, showed a miscellaneous group of Sweet Peas, Carnations, and other flowers; fruit, vegetables,

&c., for which the Society's Gold Medal was awarded. Mr. FRED EAMES, Frome, was given a Silver-Gilt Medal for a collection of hardy flowers.

NATIONAL DAHLIA.

(By TELEPHONE.)

SEPTEMBER 5 and 6.—A year ago at the holding of the annual show of the National Dahlia Society, we referred in these pages to the extraordinary climatic conditions the plants had experienced in the last week of August and first week in September. The ground was dry, the atmosphere hot, and bright sunshine was registered almost every day! But such are the means that gardeners may employ in the cultivation of their plants, that even last year the Dahlia growers found themselves in a position to contribute a creditable exhibition of the various types of their favourite flowers.

The present season affords as striking a contrast to that of 1906 as could well be imagined, and the National Dahlia Society has to hold its exhibition just the same. The judging is taking place as these pages are being sent to press, but our representative at the Crystal Palace, where the exhibition is displayed, is enabled to give us a few particulars through the telephone, from which we gather that the show is likely to give satisfaction, although the quality generally is not of the highest. The entries are about equal to the average, and, consequently, there is a good exhibition.

The winner of the 1st prize in the class for 48 blooms of show Dahlias (distinct) open to nurserymen is Mr. JNO. WALKER, Thame, Oxon., and Mr. W. TRESEDER, Cardiff, has been awarded the 2nd prize.

In the smaller class for 24 blooms (distinct), Messrs. KEYNES, WILLIAMS & Co., Salisbury, have gained the 1st prize, and Mr. GEO. HUMPHRIES, Chippenham, the 2nd prize.

The best exhibit of 18 blooms of fancy varieties (distinct), in the class for nurserymen, was shown by Mr. WILLIAM TRESEDER, and Mr. J. WALKER was 2nd.

The smaller class for 12 blooms was won by Messrs. J. CRAY & SONS, Frome, and Mr. S. MORTIMER, Farnham, Surrey, gained the 2nd prize.

The principal class for Cactus Dahlias called for 18 varieties in bunches of six blooms each, and, in addition to the money prizes awarded, the 1st prize included a Silver Challenge Cup value £15 15s. This has been awarded on the present occasion to Messrs. J. STREDWICK & SON, Silverhill Park Nursery, St. Leonards; 2nd, Messrs. J. BURRELL & Co., Cambridge.

In the section reserved for amateurs, the Silver Challenge Cup offered for 24 blooms of show Dahlias (distinct), has been won by Messrs. WEBB & THOMPSON, Kingswood, Bristol, two amateur growers, who combined to make the exhibit.

Another Silver Cup offered for nine varieties of Cactus Dahlias, in bunches of three blooms each, has been awarded to Mr. W. E. PETERS, St. Leonard's-on-Sea; 2nd, Mr. J. SHOEBRIDGE, East Grinstead.

The Gold Badge, offered by Messrs. Dobbie & Co. for 24 blooms (cactus), has been gained by an exhibit from Mr. J. BRYANT, Salisbury. The money prize in this class was offered by Messrs. J. Cheal & Sons.

Some of the finest flowers in the show were staged in the class for 24 bunches of single Dahlias (nurserymen), the best collection being from Messrs. J. CHEAL & SONS, Crawley (1st prize), and Mr. M. V. SEALE, Sevenoaks.

A Silver Medal was offered by Mr. Edward Mawley for the best bunch of Cactus Dahlias in Classes 6 and 7, and this was awarded to Messrs. G. STREDWICK & SON for a bunch of flowers of the variety C. E. Wilkins.

Non-competitive exhibits included displays from Messrs. H. CANNELL & SONS, Swanley; Messrs. T. S. WARE (Begonias); Mr. J. E. KNIGHT, Wolverhampton; HOBBIES, LTD. &c.

ANSWERS TO CORRESPONDENTS.

BEGONIAS, DAMPING OFF: A. J. C. Your plants are quite free from disease, so far as can be determined from the specimens received. The damping is the result of an excess of moisture. Endeavour to obtain greater vigour in your plants by affording a more generous system of culture.

BOOKS: F. A. S. W. You would find the information required, in an abbreviated form, in *Flowering Plants and Ferns*, Vols. I. and II., by J. C. Willis, M.A., and published by the University Press, Cambridge.

LEVANTINE POMEGRANATES: South Carolina. We are unable to furnish you with the information.

MELONS CRACKING: M. L. If the cracking is not due to the formation of the "netting," it has probably resulted from an excess of moisture in the atmosphere of the Melon pit. More ventilation and a freer circulation of air should be allowed. You will find a note on this subject in our issue for August 10 last, p. 119.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. Correspondents not answered in one issue are requested to be so good as to consult the following numbers. FRUITS: C. H. Gooseberry Yellow Aston. J. A. B. Apple Sugar Loaf.

PLANTS: E. B. The Begonia flowers had dropped to pieces. If you think it is a species and not a mere seedling variety, you had better send fresh specimens, with growths attached.—V. W. Holland. 1, Aconitum Napellus; 2, A. rostratum; 3, A. Vulpura.—E. C. W. Crassula sp.—E. M. The yellow flower is Colutea arborescens. We cannot undertake to name the Sweet Peas.—B. S. 1 and 5, varieties of Helianthus; 2, Erigeron speciosus; 3, Cytisus species; 4, Arabis alba (double flowered variety); 6, Achillea Ptarmica (double flowered variety); 7, Veronica spicata.—J. A. W. 1, Probably Daphne pontica, but we cannot determine from leaves only; 2, Cichorium Intybus (Chicory).—S. H. J. 1, Yucca gloriosa; 2, Verbascum nigrum (British); 3, Fuchsia Ricartonii; 4, Olearia Haastii; 5, Veronica "Purple Queen," a garden hybrid.—6, V. salicifolia.—S. Platycodon grandiflorum.—E. B. 1, Hypericum Androsaemum; 2, H. hircinum; 3, H. elatum.—C. & Sons. 1, Pinus Laricio nigricans (Austrian Pine); 2, P. Laricio (Corsican Pine); 3 and 4, Abies nobilis.—A. E. Critchley. 1, Sedum altissimum; 2, S. reflexum; 3, Eryngium amethystinum; 4, Clematis heraclefolia.—J. W. Ptelea trifoliata.—G. W. Linaria repens var. alba.—W. C. Origanum Dictamnus (pink), Chænostoma hispida.—L. E. J. Pentstemon Hartwegii "Newberry Gem."—M. A. T. We cannot undertake to name varieties of Carnations.—W. H. Stenocarpus Cunninghamii.—A. G. 1, Podophyllum Emodi; 2, Anchusa italica; 3, Spiraea Douglasii; 4, Escallonia macrantha; 5, Diervilla (Weigela) species; 6, Leycesteria formosa.—A. M. 1, Arnebia echioides; 2, Abelia triflora; 3, Arbutus Unedo; 4, Lasiandra macrantha.—Talma. Celogyne speciosa.—X. W. Cattleya Dowiana aurea. Cattleya aurea is the usual garden name for this plant, which accounts for your obtaining it as such. Botanically it is a local form of Cattleya Dowiana.—Somerset. Kochia scoparia, a plant extensively grown for market, and for decorative gardening.—J. H. C. Vanda Roxburghii.—I. A. 1, Masdevallia triaristella; 2, Odontoglossum crinitum; 3, Ada aurantiaca; 4, Brassia verrucosa.—J. L., Shrewsbury. 1, Phytgelius capensis; 2, Vitis heterophylla variegata.

3, Prunus Pissardi; 4, Koeleria paniculata.—W. E., Norwood. Statice Suworowi.—A. C. W. Helenium autumnale, variety cupreum.—A. D. Both hybrids of Cypripedium villosum and very near to C. Harrisianum. The Anthurium is the long-spined form of Anthurium Scherzerianum.

NATIONAL CHRYSANTHEMUM SOCIETY: E. C. The Secretary to this Society is Mr. R. Witty, St. James' Villa, Swain's Lane, Highgate, London, N.

STREPTOCARPUS FLOWERS MALFORMED: E. D. The abnormality is due to fasciation or a fusion of growth. The upper flower has become regular, and presents an example of peloria—a common occurrence in many plants that normally produce zygomorphic flowers.

SUMMER BEDDING PLANTS: C. W. H. Flowerbeds filled entirely with one shade of a particular colour are liable to become very monotonous if the beds are of great size. At the same time, if shades of the same colour are employed for obtaining variety, there is a danger of their clashing with each other. For the "Blue Beds" we suggest that you plant in the middle of each, at 3 feet apart, three good plants of Campanula pyramidalis (blue), "Syon House variety," and as a groundwork to these plant light-blue flowered Victoria Asters. At a foot from the edge of the bed plant Salvia patens at distances of 2 feet apart and fill in the spaces between these with dwarf, blue, bedding Asters, finally employing an edging of single blue Lobelia. White Beds. If the specimen is well variegated retain the Acer for the centre and fill in 3 feet wide, from the Acer, with white Pelargoniums. At 18 inches from the edge of the bed put Francoa ramosa at distances of 2 feet apart, filling in the intervening spaces with white Verbenas. An edging of Antennaria tomentosa will be suitable for these beds, but the effect of this dwarf edging may be relieved by planting Echeveria secunda glauca 8 or 9 inches apart. Scarlet Beds. Use a plant of Ricinus Gibsonii or a good specimen of Cordyline australis for the centre and a Grevillea robusta 18 inches inwards from each corner. Edge with dwarf scarlet Begonia semperflorens, and fill the remainder of the beds with scarlet-flowered, tuberous-rooted Begonias. Pink Beds. Plant three or four specimens of Lavatera trimestris (rose pink) in the middle, and pink-flowered Ivy-leaved Pelargoniums, trained as small pillars, at 18 inches from each corner; edge with the same type of Pelargonium pegged down, filling in the remaining space with double-flowered Godetia. If the anchor-shaped beds, in which you require yellow flowers, approximate in shape to the nautical anchor, they are too narrow to admit of many dot plants. Dwarf yellow Antirrhinums would make a good edging and you could fill in with Calceolaria amplexicaulis, placing a good yellow-flowered Canna where the width of the beds will permit of its being displayed to advantage.

TOMATOS DISEASED: E. J. V. Your plants and fruits are badly affected with a disease known as Macrosporium solani. You can do nothing in the case of the fruits and plants already attacked, but you should remove promptly all the leaves and fruits that are seen to be affected. The spread of the disease may be arrested by spraying with the Bordeaux mixture. Burn all diseased fruits and leaves.

VINE LEAVES: F. H. The discoloration of the foliage has been caused by sudden changes of temperature in the vinery. No disease is present: the black-mould is a saprophyte, and occurs only on the dead tissue.

ZALUZIANSKIA MARITIMA: B. H. B. There is but little doubt that this is the plant you purchased years ago under the name of Erinus Lychnidea, for, as stated in Mr. Gumbleton's note on p. 161 of our last issue, the species was formerly known by the latter name, and it was illustrated as Erinus Lychnidea in the Botanical Magazine.

COMMUNICATIONS RECEIVED.—H. J.—E. H. J.—G. S. S.—J. M. P.—C. T.—A. J. B.—S. W. S.—R. S.—Garden Boy—R. V. & Sons—H. & Son—A. A.—F. S.—L. Bros.—S. D. & Co.—Miss P.—D. C. B.—C. S. S.—F. M. W.—A. C.—A. D. W.—D. R. W.—J. J. W.—H. T. G.—J. W. R.—A. C. B.—F. L.—C. R.—H. W. W.—J. D. G.—W. T.—J. C.—H. N., Florida—W. B. H.—H. T. S.—W. W. P.



THE

Gardeners' Chronicle

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PRESENT DEMAND. FOR BRITISH TIMBER.

THE past season has been one of considerable activity in the timber trade.

The demand has been good, and prices generally have been above the average; indeed, for the best quality Oak, Ash, Sycamore, and Larch wood, prices were perhaps never higher than at the present time. Particularly in Southern England has timber been valuable. Large, clean logs of Oak, situated not too far from means of easy transit, have realised fully 2s. 6d. per cubic foot, and in several instances even that price has been exceeded for exceptionally fine timber produced in Surrey and Sussex. The average value of Oak in the London district would be much lower, and from 1s. 6d. to 2s. 3d. per foot probably represents a fair average. For boat and barge-building on the Thames some splendid Oak timber, the pick of the market, has been supplied during the past season, and the price has been proportionately high. Beech timber, too, has had a steady and profitable market at all prices from 10d. to 1s. 7d. per cubic foot, whilst for the best trees from the chalky

Chiltern Hills or the districts around Boxmoor and the Chenies the demand has been unusually brisk at advanced prices. Larch cannot be procured in the quantities required, nor is it apparent that the supply will increase for many years to come. A considerable quantity of these trees will be felled in Ireland during the coming winter, but little of this timber will be sent to the English market, owing principally to prohibitive carriage rates. The Larch disease is far less prevalent in Ireland than in any other part of these islands, and some Larch trees that I saw lately in the North of Ireland, and growing on reclaimed peat bog, were unusually fine. The trunks rose straight, and with remarkably small taper, for a height of 80 feet, the cubic contents often exceeding 50 feet. Good Larch timber sells readily in England at about 1s. 4d. per cubic foot, but several instances occurred recently when 1s. 6d. was paid per cubic foot for Larch timber of first quality. Railway fencing and similar operations necessitates the use annually of large quantities of Larch wood.

Ash timber is in moderate demand, but there is a quantity of the big, knotty field and hedgerow timber on the market that is only disposed of with difficulty. Thickly-grown plantation trees, whose cubic contents average about a score of cubic feet, is that most in demand, and for which prices range from 1s. 4d. to 1s. 8d. per foot. In Bedfordshire and Buckinghamshire I recently saw some excellent Ash timber.

Large, well-grown Sycamore is by no means difficult to dispose of, at prices ranging up to 2s. 6d. per cubic foot, at which value a quantity was lately sold in Wales. This may be considered the top price, and the general price may vary from 1s. 6d. to 2s. per foot. Small Sycamore, unless for minor works such as turning and clog-soles, has not a great demand. The best logs are required for making calender machines in cotton and jute factories, but they must be of sufficient size for that important purpose. Alder and Birch timber sells readily in some parts of the country for the making of clog-soles: the usual price in the woodland is from 9d. to 10d. per cubic foot. Around Liverpool the demand for these woods for this purpose is considerable. Elm, if of best quality, has a good market, but prices vary greatly, according to the particular district; the difference of price for this wood in two adjoining counties is often remarkable. Trees from the field and hedgerow are not greatly wanted, for they are usually knotty, rough-grained, and ill-suited for the important purposes to which the best quality samples of this wood is applied. Large quantities of Elm planks are used for the making of coffins, for the boarding and flooring of carts, and for the making of furniture. The value, as mentioned, varies greatly; it ranges from 8d. to 1s. 6d. per cubic foot. In Kent, not long since, a large quantity of rough, hedge-grown Elm could not be disposed of at 8d. per foot.

Scotch Pine is to be had in plenty, but the price is not high, the average being 9d. per cubic foot in England, while in Scotland the price is even less. Best timber of Scotch Pine, used for lath-rendering, fetches 10d. per foot in Bedfordshire and several other counties. The wood of Spanish Chestnut

has a fairly ready market if it is clean, large, and free from "cup-shake." Much of this timber is split for park-fencing. The best quality logs realise from 1s. 3d. to 1s. 8d. per cubic foot. Horse Chestnut timber has scarcely any value. Large timber of Poplar realises remunerative prices; 1s. 7d. per cubic foot was paid for a big consignment of this wood near London in the spring of the present year. Poplar wood is useful for the bottoms of store-carts and barrows, being woolly and tenacious, while large quantities are also used for the making of packing cases and for other purposes where lightness is of importance. Lime timber is not greatly in demand, though inquiries were received not long since for suitable trees for the making of musical instruments.

Willow timber, if suitable for the making of cricket bats, finds a ready and profitable market, the price per cubic foot averaging 7s. 6d., though as much as 10s. 6d. has been paid for the same quantity, but the very best of this wood is by no means common. The wood of maiden or unpollarded Willows, of about thirty years' growth, is preferred for bat-making, and such wood has always a demand. Other quality Willow timber, suitable for the making of cart and barrow sides, sell at prices varying from 1s. to 2s. per cubic foot.

The timber of other less plentiful trees, such as Maple, Hornbeam, Walnut, and some of the more recently introduced Conifers, including the Douglas Fir, Austrian and Corsican Pines, have no special value, and are often classed as miscellaneous. In Scotland and Ireland the timber of Spruce Fir sells at from 6d. to 9d. per foot, but it is rarely in great request.

The firewood market has been dull, but will no doubt improve with the rising price of coal. About 5s. per cart load is the usual price for firewood logs, while faggots for fire-lighting may be bought in plenty at 2s. 6d. per 100, and of a larger type for the heating of ovens, at from 14s. to 17s. per 100, according to the quality of the wood and the particular part of the country in which they are offered for sale. A. D. W.

NEW OR NOTEWORTHY PLANTS.

CAMPANULA LONGISTYLA.

THIS fine Campanula, for which Sir Trevor Lawrence obtained an "Award of Merit" at the meeting of the Royal Horticultural Society on August 6, was first described by Mr. A. V. Fomaine in a publication in the Russian and Latin languages issued by the authorities of the Tiflis Botanic Garden, the title of which is Latinised in the *Index Kewensis* as *Acta Horti Tiflensis*. The description, which is in Latin, is in vol. vi., part 3, p. 37, and the author's remarks are in Russian. He states that *C. longistyla* has been confused in herbaria with *C. sibirica*, L. var. *major*, Boissier, *Flora Orientalis*, vol. iii., p. 901, from which it differs in the shape of the drooping corolla and other particulars.

The points emphasised in Fomaine's description of *C. longistyla* are:—Flowers large, violet, nodding. Calyx-lobes lanceolate, spreading, glabrous on the outside, fringed on the margin; appendages strongly reflexed on to the flower-stalk. Corolla bulging at the base and constricted above the middle; style much exerted. Fomaine gives no dimensions, and the following

description has been drawn up from plants raised at Kew from seed received direct from the Tiflis Botanic Garden. Individuals exhibit considerable differences in stature, in habit, and in the size of the corolla. In a small circular bed the plants in flower vary from 1 foot to 5 feet in height, and they are loosely branched from the base.

Biennial, sparingly beset with rough hairs; branches angular. Leaves thick, rough, obscurely toothed, oblong, ovate or lanceolate, rounded at the tip or acute; radical tapering downwards, 3 or 4 inches long; cauline sessile, broad at the base, and more or less clasping the stem; lower ones, 2 to 3 inches long, gradually smaller upwards. Flowers numerous, pendent, violet blue, $1\frac{1}{4}$ inch to $1\frac{1}{2}$ inch long, and wide at the top; stalk, 1 to 2 inches long. Calyx rigid, rough; lobes ciliate, acute, margins recurved; appendages between the lobes oblong, rounded, turned down close upon the stalk. Corolla bulging below the middle, constricted above the middle; lobes broad, acute, slightly recurved. Style club-shaped, longer than the corolla.

Campanula longistyla is a very attractive species; perhaps a little ragged in habit, but its rich violet flowers are sufficient to recommend it. The illustration (fig. 82) represents much larger and more crowded flowers than are shown by any of the Kew plants. It is a native of Transcaucasia, near the eastern end of the Black Sea. W. B. H.

PLANT NOTES.

LAGERSTROEMIA INDICA.

THE genus *Lagerstroemia* commemorates Magnus N. Lagerstroem, a Swede, and friend of the botanist Linnæus. About 23 species belonging to the genus are known to science, and they are natives of Madagascar, Eastern Asia, and Australia. The natural order Lythraceæ to which *Lagerstroemia* belongs is represented in the British Flora by *Lythrum Salicaria*, the Purple Loosestrife, common in ditches and other moist situations.

In the Mexican House at Kew the Crêpe Myrtle, which is the common name of *L. indica*, has recently produced its annual display of crumpled but exceedingly beautiful, rose-coloured blooms, from which it derives its common name. It is a native of tropical Asia, probably of China, and is largely cultivated in India, the Southern States of North America, and most countries where a tropical or sub-tropical climate prevails. In this country it is sometimes cultivated as a greenhouse shrub, although, in the gardens of the south, such, for instance, as at Abbotsbury, near Dorchester, it withstands the winters out-of-doors if protected by a wall.

The species is a strong-growing, deciduous tree, 10 to 25 feet high, with glabrous, light brown bark, and alternate, elliptical, pale green leaves, about 2 inches long, sessile on the branches, and mostly acute. The flowers are produced in open panicles at the end of the long growths of the current season. This circumstance affords an indication of its cultural requirements. To produce long growths and bloom freely it is necessary that the shrub should be pruned hard back in the autumn. The roots should be kept dry during winter. In the spring, in order to encourage the plant to break into growth, it should be syringed frequently. If the new growths be allowed to attain their full length without stopping, each will be terminated in summer by a large panicle of flowers. The normal colour of the blooms is rose-pink, but white, bluish-white and purple forms are known.

In parts of the United States, where the winters are too severe for the Crêpe Myrtle to exist, it is said to be a common practice to lift the plants in the autumn and store them in cellars, planting them out again in the following spring either in glasshouses or out-of-doors. This method does not appear to be practised in this country,

and seems worth the attention of admirers of this beautiful plant, who possibly find the bare stems of somewhat disagreeable appearance when devoid of leaves in the winter. H. Spooner.



FIG. 82.—*CAMPANULA LONGISTYLA*: COLOUR OF FLOWERS RICH VIOLET.
(Pollen grains magn. 300 diameters.)

SENECIO GALPINI.

FOR some years this pretty flowering Senecio has been grown at Kew, but although it is of considerable value for greenhouse decoration, and a plant of easy culture, I have not seen it elsewhere. When out of flower the general appearance of the plant would suggest an Echeveria rather than a member of the Rag-wort family, as the leaves are of a thick, fleshy nature and very glaucous. The flower stems, which reach a height of 1 foot to 2 feet, branch freely, each division being terminated by a round, closely-packed head of bright orange-coloured blossoms. Each head or cluster is more than 1 inch in diameter, and as several are developed at the same time, a well-flowered specimen makes a goodly show, added to which a succession is maintained for weeks together. The flowering season does not seem to be limited to any particular period of the year. The species is a native of the Transvaal, and may be grown in an ordinary greenhouse temperature. W.

COLONIAL NOTE.

EMIGRANTS IN NEW ZEALAND.

I NOTED in the issue of the *Gardeners' Chronicle* for May 11 a letter from a gardener in Auckland, in which he warned others not to come to this colony. In Dunedin there are a few openings for good men, but there are no large private gardens here and very little glass. I would not advise anyone either one way or the other, but may state that, whilst resourceful, pushing men may succeed here, duffers have less chance than in England. Employers have to pay good wages and must, therefore, have good men. In the gardens and reserves here we pay labourers 8s., gardeners 8s. 6d., and foremen 9s. per day of eight hours. Jobbing men in town charge 9s. and 9s. 6d. per day, and there are only a few good ones. I would like to mention the benefit gardeners out here derive from the *Gardeners' Chronicle* and other gardening papers received from England. The details concerning the "Week's Work" in "Public Parks and Gardens" and "The Flower Garden" are particularly interesting and they keep us up to date. David Tannech, Superintendent of Gardens and Reserves, Dunedin, New Zealand.

THE ROSARY.

ROSE DOROTHY PERKINS.

AMONG Rambler Roses this is one of the best for clothing a fence, wall, or unsightly object. As with climbing Roses in general, plants under three years old transplant more successfully than older plants, and are capable of making a good display in less time. The plants should be obtained in October or early in the following month. As it is always advisable to trench the soil for Roses; and allow time afterwards for the settling of the soil before planting is commenced, the work of trenching should be undertaken in the present month. If the trenching is three spits in depth, place about a 4-inch layer of rich manure, not greatly decayed, two spits deep, say 18 inches; and if the trenching should only permit of two spits being taken out, put the manure at the bottom after loosening the base with a digging fork or mattock. A small quantity of weak manure should be mixed with the top spit in each case. See that the Roses when they come to hand do not suffer from dryness at the root, and after cutting back the strongest roots a little, dip all the roots into a puddle of clay and water, adding a little cow-dung if this is procurable. In planting a Rose-tree spread out the roots in all directions, and cover them with some of the finer soil; partially fill in and make firm with the feet, then complete the filling-in and again

make the soil firm. In planting these climbers and any Roses that are not growing on their own roots, bury the point of union of Rose and stock 2 inches deep, and those on their own roots a very little deeper than when they were growing in the nursery. If the soil be dry at the time of planting afford the plants a good soaking with clear water; and before hard weather sets in, apply a strawy mulch over the roots. Cut back the plants to 5 or 6 inches in the following April, and encourage growth in after years as much as possible.

ROSA SETIGERA (THE PRAIRIE ROSE).

As an ornament for the shrubbery, this species and those derived from it are hard to beat in regard to rapidity of growth and freedom of flowering, and they are all excellent plants for covering rockwork, rough walls, and fences. They are unsatisfactory if planted in shady spots, and what shelter is afforded them against the wind should be as distant as is consistent with the object in view, viz., shelter. The soil must be well drained if naturally wet, and it should be rich and of good depth. In pruning these and most climbing Roses, it is sufficient to cut away all dead, dying, and weak shoots, and to cut back the previous year's growth far enough as to obtain two or three strong shoots. Weak plants should be cut back severely, and encouraged to make stronger shoots by applications of rich manure. F. M.

VEGETABLES.

EARLY VARIETIES OF PEAS AND BEANS.

DURING seasons like the present, and especially in the colder parts of the country, the great value of early types of vegetables is more than usually apparent.

I should like to add my testimony to that of Mr. Divers (p. 114) as to the distinctive qualities of that excellent new Marrowfat Pea Laxtonian. It is a very productive variety, with fine pods well filled with Peas which are dark green in colour and of excellent flavour. Chelsea Gem, an old favourite, sown on March 1, 25 days in front of Laxtonian, was only ready for consumption two days before Laxtonian, which would probably have beaten Chelsea Gem by a week had the varieties been sown at one time. Laxtonian with me has grown to a height of 3 feet, but Peas here generally go to a greater height than they do in most soils, and this year all varieties have grown well above the usual heights.

There is a distinct advance in the case of Broad Beans in the variety "New Extra Early." Sown with the "Early Long Pod" on March 1, the new variety came into use a fortnight in advance of the rest. This variety is of the broad, short-podded type; the pods are well filled, and the Beans are of good size and flavour. Its constitution must be excellent, for it grew well under most adverse circumstances as regards weather, and in a very cold soil. J. C. Tallack, Shipley Hall Gardens, Derby.

CHRYSANTHEMUMS IN THE U.S.A.

In *The Florists' Exchange*, of June 22, 1907, appeared the substance of a paper on the Chrysanthemum, read before the Boston Gardeners and Florists' Club by Mr. Charles H. Totty. He stated that the first seedling Chrysanthemums raised in America were exhibited before the Massachusetts Horticultural Society in 1879 by Dr. H. P. Walcott.

Peter Henderson, previous to this, had imported from Japan in 1863 some fine varieties, one of which at least, grandiflorum, was grown until very recently.

The American Chrysanthemum Society was not organised until 1889, but shows had been held for some time previous to that in the larger

eastern cities. Possibly the greatest enthusiast this country ever had is the veteran John Thorpe. Another gentleman who, although his name does not figure so much in print, did a great work in the early days, is Wm. Barr, of Orange, N.J., who is just as keen to-day in testing new kinds as he ever was.

In the early '80's, several Pennsylvania cultivators came to the front. W. K. Harris and H. Waterer left their imprint on the Chrysanthemum by raising some fine varieties. New Jersey was represented by T. H. Spaulding, and the firm of Pitcher & Manda; and two others deserving of mention as having done good service are Messrs. Fewkes and Hallock.

The Australian varieties in the past few years have swept our exhibition tables clear of the older varieties, giving us flowers of such splendid size and colours, combined with ideal habit, that there would almost seem to be an infusion of new blood into the race. The French and English seedlings are in too many cases disappointing to us, comparatively few standing the test of our climate, but the failures in the Australian varieties are few. The reason for this is because the Australian climate at flowering time is similar to ours, often warm and bright, and if a seedling shows a large, full, perfect flower in this condition, it will do the same with us. An English variety may be splendid in its native home, and yet be a failure here, showing an enormous eye, and only some five or six rows of petals. Some of the finest varieties act in this way here, including Lady Conyers, Elsie Fulton, Mrs. F. W. Vallis, which are good examples. The Australian varieties, on the contrary, succeed much better than they do in Europe; the bright sunlight here in the fall serving to bring out the size and breadth of the petal to greater advantage.

We should never lose sight of the fact that the Chrysanthemum is almost a hardy plant, and indoor culture is an unnatural condition, which in time tends to produce degeneration in the parent stock. The future will, possibly, see a race of American seedlings equal or superior to what we are now getting from Australia; but they will be raised out-of-doors somewhere in the great south-west. I am often asked how it is that the Australian types are such strong growers, splendid in both stem and foliage. Perhaps the chief reason is because in Australia they practice an out-door system of culture. Another reason why the Australian varieties are all good growers, lies in the fact that a rigid selection is kept up from the seed bed to the flowering stage. Any plant that shows an exceptionally tall, or a weak, spindly habit is destroyed before the plant reaches the flowering stage, so that the temptation to keep it, should it prove to be an exceptionally fine flower, is removed. This, I am informed, is the policy of Mr. Pockett, of the Wells-Pocket firm, and I say to-day that this firm, if they do not send us another variety, have left a mark on American Chrysanthemum culture that will endure for many years to come. The more popular type of flower at the present day is the Japanese incurved. The true Chinese type with its incurving petal is apparently too small for present-day taste, and is entirely crowded out of the commercial growers' list.

As regards the future, the author of the paper said, "Changes will come unquestionably; in fact, they are already looming up. It is seen in a reaction in some sections from the large blooms, and in the increasing popularity of single flowers, not only in Chrysanthemums, but also in Roses, Dahlias, and other flowers. Light, graceful, natural effects can be produced, impossible of duplication with the large, double flowers. Several new singles were awarded certificates in London last fall.

"The Pompons or hardy types will be planted much more largely in the next few years.

"For large, massive decorations the big flowers are unsurpassed; to make a display in an exhibition they are indispensable, and as evidence of cultural skill they tell their own story. That new types will crop up and have a share of the popularity is certain. The large flower, in its proper place, has a certain nobility that is not, to my mind, approached by any other flower, but its proper place is not in a low bowl to form part of a dinner-table decoration. That part of decorative art can be more artistically done with singles or Pompons or other small-flowered varieties."

ASTON ROWANT HOUSE.

ON one of the closing days of July we had the privilege of visiting the residence of Sir William and Lady Plowden, at Aston Rowant House, in Oxfordshire, and found there such a display of Roses and hardy flowers, including Japanese Irises, as would delight anyone having an appreciation for these plants. Aston Rowant is a railway station 40 miles from London, and may be reached by train either from Marylebone or Paddington. The passenger travels by ordinary train to Princes Risborough, and afterwards upon a short branch railway, consisting of a single track. Either route is interesting, and when Aston Rowant is reached, the district is of the most rural character.

The east front of Aston Rowant House may be seen in the illustration at fig. 83. Directly the visitor reaches the residence he becomes aware of the great amount of care given the garden, and of Lady Plowden's appreciation for floral

this point the chief attraction was the Crimson Rambler Rose growing and flowering splendidly on wires attached to, and depending from, pillars. The collection of 120 varieties of climbing Roses at Aston Rowant are trained on three fences, 14 arches, and one long pergola, and in some instances the Roses are interspersed with Clematis Jackmannii varieties. On one high fence, clad with Roses on either of its sides, we were particularly impressed with the beauty of the following varieties among many others:—Madame Plantier (white), Aimée Vibert, Gardenia (yellow in the bud, but opening into a large, semi-double flower of lemon colour which subsequently passes to white), Francois Crousse (rich crimson), Myrianthes, Leuchtstern (a single flower, pink with white centre, produced in immense clusters), Triomphe de Rennes (a very late blooming variety that is never so effective as in September), Mrs. O. G. Orpen (a very large single, pink flower, but a plant possessing a somewhat restricted habit of

Many more varieties might be mentioned did space permit, but even then it would be impossible to convey to readers an adequate idea of the gorgeous effects many of these Roses are capable of producing when grown strongly, and kept clean and healthy as the plants appear at Aston Rowant. Rambler Roses are notorious for their habit of flowering for a brief period only, but there are so many varieties obtainable that it is easily possible to so furnish a pergola or fence that the first flowers will open in June, and the last in October. Lady Plowden's collection is one composed of all the best varieties.

A very noteworthy feature in these gardens consists of three long flower borders, each about 300 feet in length. The first extends under the shadow of one of the garden walls, on the outer side; the second, parallel to the first, but divided from it by a grass-covered path; and the third also parallel and divided from the second in the same manner, and by a similar path.



[Photograph by Lady Plowden.]

FIG. 83.—ASTON ROWANT HOUSE, OXFORDSHIRE, THE RESIDENCE OF SIR WILLIAM AND LADY PLOWDEN.

displays, especially of Roses. This is evident in the manner in which these latter plants are cultivated in all available situations, even up to the front doors of the building. Standing with one's back to the creeper-clad house, the view over the grounds into the far distance, where it is effectively intercepted by the Chiltern Woods, is very gratifying. Three of the permanent features close to the front are a fine old Beech tree, a grand Cedar, and an ancient Yew of considerable dimensions, and which has probably stood there since the middle of the 17th century. The low terrace boundary, at the time of which we are writing, was clad with profusely-flowered plants of several varieties of Rambler Roses, as Blush Rambler, Hiawatha (one of the most charming of single Roses), and others. Some bright flower-beds lit up the lawn with patches of well-toned colour, and beyond

growth), Lily Ito (a new variety not then in flower, but promising well for a later display), Debutante, and Flora. Other varieties noticed in various positions were Dorothy Perkins (not then at its best), Mrs. F. W. Flight, Wedding Bells, Waltham Bride, Trier (an effective white variety with anthers of glowing yellow), Rubin, Lady Gay, Ards Rover (passing out of bloom, being one of the earlier varieties to flower), Papillon (a very distinctly coloured Rose, bearing shades of cherry-red and salmon), Reine André (pink and white, each flower being of moderately large size), Elisa Robichon (of delicate flesh tint), Euphrosyne, Soliel d'Or (a dwarf-growing Rose with fine yellow flowers), Jersey Beauty (of very fugitive character, but possessing large single flowers of sulphur colour), Helene, and Lord Penzance's hybrid Briars in variety. The Briars were growing on a fence to the height of 14 feet.

The excellent choice and disposition of the plants in these borders and the high cultivation afforded them is a striking testimony to the skill of the gardener in charge, Mr. W. H. Clarke, and to his capacity for "taking pains." We have never seen a better instance of border gardening, and the whole has been planned and carried out by the present gardener, as have several other important features that go far to make up the attractions Aston Rowant now possesses. The Pentstemons, Galegas, Dahlias, Phloxes, Michauxia campanuloides (4½ feet in height), double white Winter Stocks (put out into these borders from boxes), and an infinite variety of suitable plants, most of them valuable for producing flowers of a type that can be put to good decorative service in a cut state, are cultivated on these borders as perfect specimens. The intervening spaces between the permanent

herbaceous perennials are filled with thousands of seedling plants raised specially for the purpose, and that are capable of flowering well in the first season, whether of only annual duration or otherwise.

Sweet Peas, as in most other gardens, are grown numerous, and with greater care than was given Sweet Peas some years ago. A few circular groups of these in round beds, each group exhibiting one variety only, were of extraordinary proportions, the height and vigour of the plants being at once noticeable, but the staple soil of this garden, not being of the best, it had been removed 4 feet deep in this case, and good soil and much manure substituted for it.

It may be interesting to remark that in respect to the Dahlias, Lady Plowden does not favour their flowering before the month of September. She associates them peculiarly with autumn, and any blooms that appear on the plants before September 1 are removed whilst their potential beauties are still undeveloped.

situated in a low-lying portion of the park, and one that is shaded in more or less degree by tall-growing forest trees. We should expect the crops to be less in bulk and inferior in quality to those that might otherwise have been secured with the same amount of cultivation as the trees now require at the hands of the gardener.

There are the usual fruit houses necessary on such an estate, and their management leaves nothing to be desired. The Peach trees are in capital condition, and have borne heavy crops of fine fruits this season. Fruits of Early Rivers Nectarine, for instance, have weighed 12 oz. and 13 oz. each. Goldoni Nectarine, though not usually considered first class, is grown here of such a quality as meets with considerable appreciation.

At the commencement of this note we alluded to the Japanese Irises, and we may refer to them in conclusion. Lady Plowden has herself brought most of them from Japan. They have been introduced under native names, and are cultivated along the sides of the water shown

was obtained from the Continent, whence it had been introduced from Japan, its native country. I planted it in an open and sunny situation, where it blooms freely. Its flat cymes of yellow flowers are seen to advantage, and appear bright among the other flowers from July onwards. The leaves of *P. gibbosa* are swollen or blistered in parts, and these are the least attractive feature of the plant. My plant grows to a height of about 9 inches.

CAMPANULA "CHINA CUP."

AMONG the most satisfactory of the dwarfed Bellflowers for garden purposes are the forms of *Campanula carpathica*, and which are among the most valuable subjects for the decoration of the border or the rock-garden. Some cultivators experience a difficulty with the form called *turbinata*, and declare it to be not so enduring as some of the others; but this is not the experience of the writer. It is, however, of smaller stature than the majority. One of the newest and most delightful of these forms of *C. carpathica* is that known as "China Cup," a variety sent into commerce by Messrs. Barr & Sons a few years ago, and which I acquired on its introduction. My plant is now almost 2 feet in diameter, and it is very beautiful on one of my rockeries. The flowers are not so freely borne as on some of the other varieties: they are large, about 2 inches across, a good shade of blue, and the form is of a broad, open cup, with reflexed margins. These flowers are well raised on erect stems, and the whole effect is pleasing. *S. Arnott, Dumfries.*

TREES AND SHRUBS.

CALOPHACA WOLGARICA.

IN Scotland this Siberian plant is but rarely cultivated, although it was introduced so long ago as 1780. Probably the largest specimen in Scotland is a plant growing on a western wall in the Comely Bank Nurseries of Messrs. Cunningham & Fraser, Edinburgh, where it annually produces its velvety, pale, yellow-coloured, Pea-shaped flowers throughout July and August. The flowers are borne in racemes on short stalks in the axils of the pinnate leaves, which have six to seven pairs of orbicular-shaped leaflets. A slow-growing, much-branched, hardy deciduous shrub, this specimen is fully 3 feet high, and produces annual shoots averaging 6 inches in length, on which the flowers are borne. Loudon, in his *Arboretum et Fruticetum Britannicum*, mentions that the *Calophaca* forms an attractive plant when in fruit, as the flowers are succeeded by reddish-coloured pods, but the climatic conditions near Edinburgh are not sufficiently favourable for the legumes to mature. Propagation of the *Calophaca* is usually effected by grafting on stocks of the *Laburnum*, but it may also be increased by seeds, which are catalogued by some of the Continental nurserymen. *Wm. Smith, Royal Botanic Garden, Edinburgh.*

CAMPANULA PETRÆA.

THIS little-known *Campanula* (see fig. 84), which was given to me by a friend, has bloomed well with me this summer. It is exceedingly free-blooming, for, besides the terminal bunch of pale yellow flowers which are well shown in the illustration, a small subsidiary bunch appeared at the axil of every leaf. Of these I counted no fewer than thirty-two on the branch from which the illustration has been prepared. Owing, however, to the almost total absence of sunshine, and the frequent rains, many of these did not open their flowers. The plant is figured by the great German authority, Reichenbach, both in his *Flora Germanica*, vol. xix., t. 1,595, and in his *Icones Criticae*, vol. vi., t. 571. The plant, being a biennial, dies after flowering. *W. E. Gumbleton, Belgrave, Queensland.*

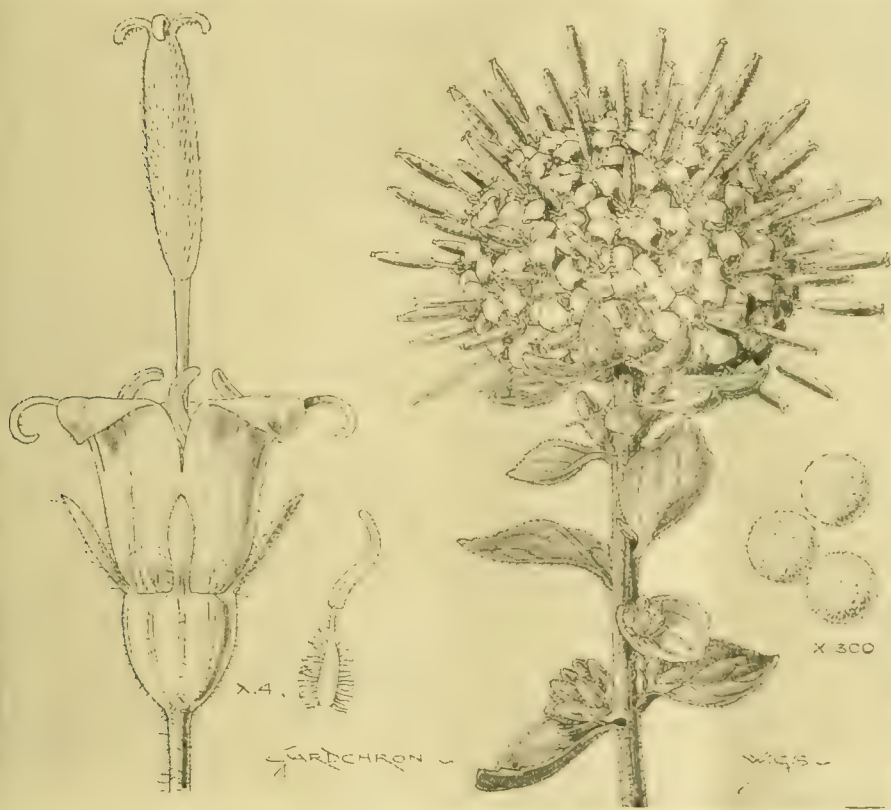


FIG. 84.—*CAMPANULA PETRÆA*: COLOUR OF FLOWERS PALE YELLOW.

Single flower and stamen $\times 4$; pollen grains $\times 300$.

There is the inevitable "wild" garden, where the cultivator, though as persistent as in other portions of the garden in his care for particular species, nevertheless screens the evidences he might leave of his work, and so produces an effect that is less artificial in character than the gayer portions that visibly advertise themselves as the result of art.

Some of the rarer and choicer trees and shrubs have been planted in various positions in the pleasure grounds during recent years, and these will become more and more effective for some considerable time to come. These include flowering species as well as those which are cultivated solely for their beauty of form and foliage. A specimen of *Sophora pendula*, about 9 feet high, showed itself to be a lawn tree of distinct appearance, and therefore valuable for occasional planting to give relief to others in a collection.

Most of the fruit trees are planted together in an area of about 2 acres, which is protected from birds by wire netting. This orchard is

in the illustration. They were beautiful at the time of our visit, being in excellent health, and flowering most freely. Some of the varieties were charming in the shades of colour they presented, and the flowers themselves were of very large size. Details of the cultivation they have been afforded may be found on reference to an article on the subject written by Mr. Clarke and published in our issue for May 20, 1905, p. 308.

THE ROCK GARDEN.

PATRINIA GIBBOSA.

OF the ten or a dozen species of *Patrinia*, a genus belonging to the Natural Order Valerianaceae, a few only are represented in British gardens. I have had in my garden for a considerable number of years *P. gibbosa*, and although the flowers of this species individually are small, yet they are numerous produced, and the range of flowering extends over a long period. My plant

THE BULB GARDEN.

GLADIOLUS SAUNDERSII AND G. PRINCEPS.

GLADIOLUS *Saundersii*, although it was introduced into this country nearly forty years ago, is rarely seen in gardens. One reason for this, probably, is that its habitat being in South Africa, it is considered too tender for open-air culture. As a matter of fact, it appears perfectly hardy, never being given the slightest protection, and coming up stronger each year. A large clump with thirty or more flower-spikes is a glorious sight towards the end of August. The spikes reach a height of 3 feet 6 inches, and the flowers, three of which are expanded on a spike at the same time, are very handsome. In colour they are a light shade of scarlet, the three lower segments having a white centre plentifully spotted with vermilion. The upper petal, which is lance-shaped, is inclined forward, and the side petals are much reflexed, the expanded blossoms measuring rather more than 3 inches across. If the petals, however, are stretched out the flower will measure 6 inches. Considering its hardiness, beauty, and the attractive form of the flowers, it is a pity that this *Gladiolus* is not more widely grown. It is a far more reliable garden plant in the south-west than *Gladiolus princeps*, which has proved a very bad doer in many places, although described as being perfectly hardy when first sent out. Here it entirely died out, and of a dozen bulbs procured this spring and planted in good soil, only four have flowered, six being apparently dead. In another garden, a few weeks ago, I saw where two dozen fine bulbs of *G. princeps* had been planted. All that had appeared above ground were several weak leaf-growths, none of which would bear bloom. *G. princeps* has proved a very disappointing plant, and its culture has in consequence been given up in many gardens. *G. Saundersii*, on the contrary, gives no trouble, increases year by year, and always flowers magnificently, so that it can be strongly recommended to take the place of *G. princeps* where that plant does not succeed. *S. W. Fitzherbert, Devonshire.*

MARKET GARDENING.

NOTES FROM WORTHING.

TOMATO plants were, as usual, allowed to develop four or five internodes above the point where the first flowers appeared, but, owing to the poor prospects of the later fruits maturing, the plants have been shortened to a point immediately above the second, or at most the third, fruit truss.

Houses are being prepared for planting Cucumbers at the middle of September. Royal Kidney Potato was being lifted, and the crop was an excellent one. The variety Sir John Llewelyn had tubers of the first quality, but the yield was light.

Warner's King, Ecklinville Seedling, and Cox's Pomona Apple trees are carrying the best crops for several years past.

IVY ARCH NURSERIES.—Gros Colmar Grapes in these nurseries were of fine quality. A few bunches of Black Alicante averaged 3 lb. each. I was informed that all through the season bunches of Muscats of Alexandria weighing 2 lb. and upwards were in demand. From this nursery is sent away 50 to 100 bunches at a single cutting.

NEWLY-PLANTED VINERIES.—Houses of both Gros Colmar and Black Alicante vines, some of which were planted in 1906, and others this season, were doing well. Tomatos are accommodated in the vinery the first season, but when the vines are two years old, only half the quantity of Tomatos is planted, in order that the rods should have room, not only to grow, but also to mature. Invariably these vines in the second year, and in some cases the first year, are trained with double rods. *Stephen Castle.*

The Week's Work.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Border Carnations.—The season has been very favourable for the rooting of layers, and shoots that were prepared at the beginning of last month may now be lifted and planted in their winter quarters. A dull day should be selected for this operation, and the young plants are better if they are planted somewhat deeply. Make the soil about them as firm as possible, and it will be well to secure the shoots from damage by rough winds. This may either be done by tying them to short sticks or by placing three sticks close around each plant. Marguerite and perpetual-flowering Carnations should be tied to neat stakes, and while they are in flower it is advisable to protect them in some efficient manner from wet and frost. This protection should be of a temporary nature, so that it may be removed on all favourable occasions.

Lavender.—After five or six years from the planting of this shrub, the quality of the flower-spikes begins to deteriorate, so that it is necessary to periodically make new beds. This may be done by laying shoots about 4 inches in length, and with a heel attached, in rows in a nursery-bed. Bury about half the shoot and tread the soil covering them firmly. Roots will form during the autumn and winter, and at this time next year the plants may be placed in a bed at 18 inches apart, ultimately removing every alternate plant before the plants become crowded. The Lavender thrives best in a light and rather poor soil.

Lawns.—Showers and heavy dews will now hamper the work of grass-mowing; therefore, as a rule, wherever the grass is sufficiently dry, the lawn-mowers should be kept at work. The sun's rays being less powerful at this season, all danger of the grass "burning" is over, and the mowers should be gradually adjusted so that they cut the grass shorter. The turf around trees should be frequently clipped in those places where the mower does not reach it.

Late-flowering Tulips.—Darwin, Cottage, Parrot, and many species of Tulips require a longer period of growth than the ordinary bedding kinds. They should therefore be planted as early as possible after this date. Home-grown bulbs should first be cleaned and sorted; any outer scales that are at all imperfect should be rubbed off. These Tulips should be planted closely together, and in heavy soils, at about 4 inches deep, but if the soil is light they may be planted slightly deeper. Most late-flowering Tulips succeed well when grown under partial shade and under conditions suitable for the smaller Fritillarias, which should also be planted at the present time.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to LORD CLINTON, Bickton, East Devon.

Gage Plums.—Plum trees generally this year are yielding good crops of fruits, and choice varieties of wall trees, including Reine Claude de Bavay, Guthrie's Late Green, Jodoigne Green Gage, Golden Transparent Gage, and Late Orange should be covered with either hexagon netting or the proper wasp-excluding hexagon supplied by most horticultural sundriesmen. Isolated fruits can be tied up in muslin, or some similar material, but these bags sometimes cause the fruits to decay, especially during dull, wet weather. Coe's Golden Drop forms an excellent dessert Plum if it is allowed to thoroughly ripen on the tree; the fruits should be protected from wasps and flies.

Pears.—The variety Williams' Bon Chrétien is now ripening, especially on trees occupying a warm position on a wall. Early ripening varieties of Pears should not be gathered in bulk; the trees should be examined for ripe fruits at intervals of a few days, and any just turning ripe should be placed in the fruit room or some other suitable place where they will finish ripening in a few days. Beurré d'Amanlis and Autumn Nelis are two good varieties of Pears suitable for early autumn use. The green, melting flesh of the former variety has the highest flavour when grown against a warm wall.

Preparations for planting.—If an extensive planting of fruit trees and bushes is to be undertaken this autumn, the ground should be trenched, and given what manure is necessary as soon as possible. This will allow plenty of time for the soil to settle before the work of planting is carried out. It is well to have ready some suitable soil for placing amongst the roots. This should consist of a mixture of fibrous loam, lime, soot, and wood ashes. Mortar rubble and old plaster may be substituted for the lime. All trees bearing stone fruits should be given some of this compost at planting time, and I find Apple and Pear trees also benefit by its presence. The heap of soil awaiting use should be protected from heavy rains by spare sashes or doors thrown over the top. When planting Gooseberry and Currant bushes, some partly-decayed manure should be used in addition to the new soil, especially if a few only are to be planted or gaps merely made good.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq., Cobham Park, Surrey.

Cauliflowers.—The plants raised from the earliest sowings should now be large enough for pricking out. For late districts these will probably be the most satisfactory, but they may prove too early for more favoured localities, in some of which it would not be too late even now to make another sowing for forming a gradual succession, if not the main supply. In all cases these and similar plants should be transplanted as soon as they are large enough to be handled conveniently. This will ensure their making a sturdy growth previous to being placed in their permanent quarters.

Tomatos.—The out-door crop is very backward, and the earliest fruits have only now finished swelling. To hurry the development of the later fruits the plants had better be stopped harder than is usual. If some old glass lights can be placed in front of the plants, or even a covering be provided at night-time, using any light shading material for the purpose, some good will result. If rains are frequent when the fruits are ripening, insert the spade into the soil at a distance of about 18 inches from the main stem, and by severing the roots thus counterbalance the excessive supply of moisture, which would be likely to cause the fruits to crack.

Parsley.—Where it is necessary to afford shelter to Parsley throughout the winter, it will be well to lift some of the plants raised from sowings made in July and plant them out in unheated frames, keeping the lights off until severe weather sets in and protection becomes necessary. The plants will then grow strong and hardy, and if air be afterwards admitted freely on every favourable opportunity, the plants will be less likely to suffer from damping.

Onions.—The spring-sown Onions, including those that were raised in boxes or frames and were subsequently transplanted to beds in the open garden, and that, having been lifted, have become well dried and ripened through exposure to the sunshine, should now be stored in a light, well-ventilated shed until a more convenient time, when it will be necessary to tie them up into bunches or ropes. The matter of thoroughly drying and ripening Onions is a very important one, especially where the bulbs are required to last in good condition through the winter and well into next spring, for unless the drying is done thoroughly decay is sure to set in at about mid-winter. As regards the tying together of the bulbs, we find that tying them in bunches of from 12 to 20 bulbs each is more convenient and economical than roping them, but this, of course, is a matter of opinion.

Coleworts.—Make the final plantations of Coleworts without delay, and fill all blanks that have occurred in the earlier plantations.

Endive.—Further plantations of Endive should still be made in order to provide for successional crops. Sufficient plants may be left in the seed bed to form a crop on that ground, for these will be found to succeed equally as well as those that have been transplanted therefrom to other quarters.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Odontoglossum crispum.—Plants of this species and its numerous varieties that flowered early in the year, and which were repotted soon after that time, if they are still in a healthy condition, will require no such attention now, but any plants which have deteriorated should at once be turned out of their pots, have their roots well washed, all decayed parts cut away, and be potted anew. Afford them fresh pots sufficiently large enough to accommodate them for one season only. Plants that flowered later in the season are now growing freely, and the new growths will be pushing out numbers of young roots; the present is therefore a suitable time to examine such plants, and to afford any which require it some fresh rooting-material in clean pots. Some plants, perhaps, are only now commencing to grow; the potting of these should be left until the more forward specimens have been given attention. When repotting, turn the plants carefully out of their pots, and cut away all useless back pseudo-bulbs, it being necessary only to leave two pseudo-bulbs behind each leading growth. This will necessitate the removal of the greater portion of the compost at the back of the plant, but unless the old soil has become sour or decomposed under the leading growths and where the principal young roots are found no more of it should be disturbed than is absolutely necessary. In the majority of cases, when treated in this manner, the plants may be repotted into pots of the same size as they have previously occupied. The receptacles should be made clean and dry, and they should be provided with material for drainage to one-third of their depth, using broken crocks, and placing the larger pieces at the bottom, covering the whole thinly with rough sphagnum-moss.

Compost for Odontoglossums.—A suitable compost for *Odontoglossums* consists of good fibrous peat and sphagnum-moss in equal proportion. These should be mixed together in a rough condition, and afterwards be cut into small pieces, but not too fine, with a strong pair of shears, adding sufficient crocks to ensure porosity. A mixture of *Osmunda* fibre and *Polypodium* fibre in equal parts may be used with equally good results, provided it receives the addition of moss and small crocks, as previously advised. I have entirely discarded the use of leaf-mould as a rooting-medium for these plants, as, after considerable experience, I find that its durability is deficient when compared with the other materials I have just mentioned; also that when grown in the leaf-mould mixture, the pseudo-bulbs shrivel more quickly under the strain of flowering, and the flowers do not retain stability nor freshness, when cut, so long as they do when grown in the composts recommended above. When preparing the moss for use, and in clearing it from leaves and rubbish, search for slugs, and if any are found it will be advisable to place the moss in water, and wash it thoroughly, so as to cleanse it from these pests or their eggs, which are almost imperceptible to the naked eye.

Potting.—Pot the plants with moderate firmness, and have the base of the pseudo-bulbs level with the rim of the pot. When the potting is finished, prick in a few pieces of living moss over the surface of the compost. For a few weeks after repotting, it is advisable to afford water sparingly, and sufficient only to favour the growth of the sphagnum. A moist atmosphere should be maintained, by syringing between the pots both morning and afternoon. Admit plenty of fresh air, especially when the weather is mild and damp. Shade the plants from direct sunshine at all times. It is impossible here to enumerate all the different species of *Odontoglossums* and their numerous hybrids, but among them will doubtless be many plants requiring similar treatment at the present time as advised for *Odontoglossum crispum* and its varieties.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Chrysanthemums.—The earliest-flowering varieties of those grown in pots for the decoration of the conservatory or other plant houses should be removed to positions under glass before the

blooms have fully opened, or they may be damaged by frequent showers. If the weather is bright after the plants have been housed, they had better be afforded shade from the sunshine during the hottest part of the day, and it will be necessary to damp the stages and paths. The blooms will be better and last longer if kept as cool as possible. The main batch of *Chrysanthemums*, grown for the production of large blooms, need very close attention. The "taking" or selection of buds for developing blooms, the tying of shoots, and the removal of superfluous shoots are important details. The affording of necessary manures should be strictly attended to, in order to get the best blooms possible. An occasional change of manure is beneficial, but most gardeners have their particular preferences in this respect. In any case, cultivators should be careful to avoid applying manures in too strong a form at any particular time. Be quick to discover the presence of any pest, whether insect or fungoid, and adopt preventive measures as often as necessary. As soon as the earlier blooms begin to show colour, place such plants under glass at once, or the outer florets of the blooms will suffer damage. Bush plants grown for use as decorative plants or for supplying blooms for cutting should have the shoots staked well out, so that each may be exposed to the sunshine, and for the same reason the plants should be arranged together somewhat thinly. These details are especially important in respect to the varieties that will flower at about Christmas-time.

Perpetual-flowering Carnations.—The flower-buds on the earliest plants that are grown for flowering in winter will now be getting into a forward condition, and no time should be lost in housing them. If allowed to remain outside after they commence to show colour, the blooms are never so clean and free as when developed under glass. Thoroughly wash the interior of the house before removing the plants. Attend to the details of tying and disbudding, this latter operation being essential if the finest blooms are desired. Arrange the plants thinly on the stage, and fumigate the house at the first opportunity, to get rid of any fly that may be lurking unseen on any of the plants. If, after housing, any hot weather is experienced, it will be advisable to use the blinds for an hour or two in the day, and to give the plants a slight spraying with the syringe late in the afternoon; this will have an effect similar to the night dews to which the plants are accustomed when out-of-doors.

General work.—Dull and damp weather being the rule this season, shading should be dispensed with as much as possible, affording a little extra ventilation on all suitable days in order that the growth of various plants may become hardened before winter. In the next few weeks gardeners will be very busy housing the plants that have been grown out-of-doors during the summer, but which must be removed to a safe position before frost occurs. There is no gain in leaving everything to the last week, therefore look around the houses to see what may be thrown out, or stored away for the winter. Get the interior of the houses washed and disinfected from insect and fungus pests. When housing the plants give as much room to each individual plant as can be spared, remembering that one good plant is worth more than several poor ones, which are the results of overcrowding.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq., Norwood, Alloa, Clackmannanshire.

The vinery.—Vines from which the fruit has been gathered should be syringed each afternoon to prevent attacks by red spider, for it is essential that the foliage should remain healthy as late in the season as possible. Do not allow the borders to become either dust-dry or saturated at this season. An application of liquid manure is valuable at this stage, for it assists in building up the buds and aids the maturation of the wood. Vines that are making gross growth should not be given any stimulant. Young vines, which were planted in the borders in March and June, will continue to grow vigorously as long as the conditions for growth are favourable. The atmospheric temperature of the house at night should be 65°, and by

day (allowing for an increase with sun heat) 85°, but on dull days the temperature need not exceed 70° to 75°. Maintain plenty of moisture in the atmosphere. Should red spider appear syringe the foliage each afternoon. Test the border for its condition of moisture, for it must not be allowed to become dry. As soon as the leading shoot reaches the top of the trellis, pinch out the growing point. Tie in the lateral shoots if growth is weak, but if it is gross pinch the side shoots at the first leaf. Maintain artificial heat in the house at night-time, but always allow the top ventilators to remain open a space of 4 inches. In order for the canes to thoroughly ripen, a free circulation of air must be allowed, and the top and the bottom ventilators opened daily when the weather is favourable.

The Orchard house.—All trees that have been cleared of their fruits should be placed out-of-doors and be plunged to the rim of the pots in coal ashes. Apply water to the roots cautiously; an occasional dose of manure-water will be of benefit to the trees. Later varieties of Pears in pots, including Pitmaston Duchess, Doyenné du Comice, and Marguerite Marillat should have their fruit secured by soft matting or twine wound around the fruit-stalk and affixed securely to the branch or shoot.

Strawberries.—Plants that were potted finally last month are now rooting well and making strong leaves. Apply manure-water to the roots occasionally. Remove all runners as they appear. See that the plants have ample room to receive the full benefit of light and air. Turn the pots round occasionally to prevent the roots growing through the drainage hole.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

Street Trees (continued).—In planting trees in streets it is necessary to excavate holes about 2 feet 6 inches square. If the soil is not of a suitable nature, fresh, good loam must be supplied to a further depth of 2 feet 6 inches, and enriched with manure, so as to give the young trees a good rooting medium at the start. When the trees are planted, paving stones should not be placed nearer the stem than 1 foot 6 inches, as this open space is necessary in order that air and moisture may reach the roots. Although it would be beneficial for the trees to keep the soil around the stems an inch or two below the surface of the pavement, inasmuch as rain could be the better collected, this is not practicable on account of the inconvenience it would cause to pedestrians, hence the soil has always to be kept flush with the general surface of the path or road.

Trees for street-planting should be rarely less than 10 feet high, should have clean, straight stems, and have no branches for at least a distance of 6 feet above the ground. It is essential to protect young trees in public streets, and for this purpose they are usually enclosed in iron ornamental tree guards. It is the provision of these latter which makes tree-planting such an expensive undertaking, but when once the guards are provided they can be used again and again if they are given the necessary repairs. A small bar of wood or iron, run horizontally across the top of the guard, is required as a stay on which to tie the trees—a matter which should be attended to immediately after planting. As the stem may be easily damaged by rubbing at the point where it is bound to the stay, it is a good practice to have this part protected by a piece of mat or carpet kept in position by wire netting. When by any means a tree breaks away from its stay and rubs against the top of the tree guard, this carpet band keeps the bark of the stem from becoming chafed until such time as it may be attended to and re-tied.

When in the course of a few years after planting the stems become stout enough to be self-supporting the tree guards may be removed. To prevent the trunk from being cut and damaged by mischievous persons, it is often found necessary on the removal of the tree guard to protect it by a band of 1-inch mesh wire netting up to a height of 6 feet. After the stems become 4 or 5 feet in circumference wire netting is not generally required.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, SEPTEMBER 14—Newton Mearns Fl. Sh.

MONDAY, SEPTEMBER 16—
Nat. Chrys. Soc. Floral Com. meet.

TUESDAY, SEPTEMBER 17—
Roy. Hort. Soc. Coms. meet.
Brit. Gard. Assoc. Ex. Council meet.

SATURDAY, SEPTEMBER 21—German Gard. Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—56° 8'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, September 11 (6 P.M.): Max. 73°; Min. 47°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, September 12 (10 A.M.): Bar. 30.1; Temp., 63; Weather—Overcast.

PROVINCES.—Wednesday, September 11 (6 P.M.): Max. 67°; Dover; Min. 57°; Scotland E.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—

Sale of Dutch Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY TO FRIDAY—

Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

We have received information from the Secretary of the Royal Victoria Medalists. Horticultural Society that, at the last meeting of the Council, three new names were added to the list of Victoria Medalists of Honour. The vacancies were caused by the deaths of Sir Thomas Hanbury, Bart., Sir Michael Foster, and Mr. Harry Turner, and their places have now been filled by the election of Sir John T. D. Llewelyn, Bart., Mr. George Dickson, and Mr. Henry Ballantine.

SIR JOHN T. D. LLEWELYN, BART., is a well-known personality in the horticultural world. In 1891 he was elected a member of the Royal Horticultural Society's Council, but retired in the following year. Upon re-election in 1893 he continued to serve in the position until 1902, when he again retired from the Council, and was elected a Vice-President. He is a member of the Scientific Committee, and in many other directions has assisted in helping forward the Society's interests, and the interests of horticulture generally. As President of the Horticultural Club, Sir John Llewelyn has consistently shown such enthusiasm and geniality that have endeared him to all who have been in the least associated with the Club's doings,

and his devotion to the duties of his office have repeatedly necessitated special journeys to London from his residence in South Wales in order to attend important meetings. The Horticultural Club has been encouraged to take its part in developing horticultural interests, and as recently as last year it was mainly due to Sir John Llewelyn that the Club was in a position to entertain the foreign visitors and others on the occasion of the holding of the Conference on hybridisation or genetics. The success of that gathering is one of the incidents in the history of the Club that will be recalled with pleasure by all those who are interested in its welfare. Sir John Llewelyn, however, has filled so many positions, and helped in so many movements, that we can only recall

Sir John Llewelyn has nevertheless maintained undiminished his appreciation for the true hybrids. The favourable climate at Penllergaer has enabled many of the Himalayan species to develop into such magnificent specimens as are seldom seen in this country, and their beauty, even when not in flowers, can scarcely be estimated by those who have not seen the plants. In a paper on the Himalayan species, read at a meeting of the Horticultural Club in June, 1904 (see report in *Gardeners' Chronicle*, June 18, 1904, p. 399), Sir John Llewelyn related some of his experiences in their cultivation, and, in addition, showed himself to be a keen critic of the points the hybrid Rhododendrons should possess when judged as florists' flowers.



SIR JOHN T. D. LLEWELYN, BART., V.M.H.

some of them. He has been President of the National Potato Society since its establishment, and as Vice-President of the National Chrysanthemum and National Carnation and Picotee Societies, and patron of the National Dahlia Society, Sir John Llewelyn has been brought into many circles of horticultural work, in all of which he has greatly assisted the efforts of those with whom he has been associated.

In another direction Sir John Llewelyn's devotion to horticulture may be seen in the gardens at Penllergaer near Swansea, where practical gardening of the best type has been carried out for many years past. The specialities at Penllergaer include hardy Rhododendrons and Azaleas, Bamboos, and the flowering trees and shrubs. Whilst evincing great interest in the magnificent Rhododendron hybrids that have been raised in recent years,

MR. HENRY BALLANTINE has been for many years head gardener to Baron Sir H. Schröder, The Dell, Egham. The Dell gardens are among the most beautiful and best maintained establishments in this country. They are especially famous for the rich collection of Orchids they contain. Many important species and varieties have been shown from this collection at the Royal Horticultural Society's meetings, and may be found in the list of plants which have received first-class certificates. It is interesting to recall some of the fine plants which Mr. Ballantine has first presented from The Dell gardens. Taking, for example, the spotted forms of *Odontoglossum crispum*, which are among the greatest favourites at the present day, there is a very fine collection at The Dell, and this collection contains specimens from the earlier introductions, which are still some



Photograph by John Gregory.

THE PINE-WALK AT FIR GRANGE, WEYBRIDGE, THE RESIDENCE OF
W. A. BILNEY, ESQ.

of the best plants to be seen, notwithstanding they have been under cultivation for long periods. First-class certificates have been obtained by *O. crispum* Ballantinei, *O. c. flavescens*, *O. c. Dellense*, and *O. c. Veitchianum* in 1884; *O. c. Schroderianum* and *O. c. Sanderianum* in 1885; for *O. c. apiatum*, which was the sensational Orchid of its day, in 1886, and for *O. c. Baroness Schroder*, *O. c. nobilior*, and other grand forms at more recent dates.

Turning to the blotched forms of *O. Pescatorei*, the record is equally remarkable. The Dell collection still retaining in splendid health the beautiful *O. Pescatorei* Veitchii (F.C.C., 1882) and *O. P. Schröderianum*, both of which plants are still unmatched, despite the thousands of specimens of this species which have been imported since that year. Mr. Ballantine had the good fortune to present the first *Odontoglossum Wilckeanum* on March 10, 1885, and its variety *Godefroyæ* on the same day. First-class certificates were awarded for both plants. In most of the other sections of *Odontoglossum* early honours were secured by representatives from this collection. From 1891, when The Dell specimen of *Cypripedium insigne* Sanderæ secured a first-class certificate, it was for some years, and probably still is, one of the best plants of its kind; and many other cases might be cited where Baron Schröder's liberality in securing the best varieties and Mr. Ballantine's skill in cultivating them to the highest standard have brought credit to the gardens in which they both take such delight.

Although the Orchids have played the most important part in spreading the fame of The Dell gardens, other branches of gardening have been equally well carried out. It would be well for horticulture if the types of owner represented by Baron Schröder and of gardeners by Mr. H. Ballantine were the general rule.

MR. GEORGE DICKSON is the head of the firm of Messrs. Alex. Dickson & Sons, Newtownards, Ireland, and his election to the list of Victoria Medalists very appropriately fills the vacancy caused by the death of Mr. Harry Turner. Messrs. Alex. Dickson & Sons have secured an enviable reputation for raising new seedling Roses, and most of the varieties they have introduced to commerce are now in general cultivation. As showing how much the Newtownards seedlings are appreciated by Rosarians, we may mention that in the National Rose Society's *Official Catalogue of Exhibition and Garden Roses* for 1903, out of the 33 exhibition varieties included in it which were ten or fewer years old, as many as 18, or more than half that number, were raised at Newtownards. Some of the best-known Roses raised at Newtownards include the varieties Dean Hole, Hugh Watson, Irish Harmony (single), Rev. David R. Williamson, Ards Rover, Helen Keller, Hugh Dickson, Margaret Dickson, Mrs. R. G. Sharman Crawford, Ulster, Ards Pillar, Alice Grahame, Bessie Brown, Countess of Caledon, Killarney, Liberty, Mrs. W. J. Grant, Mildred Grant, Lady Mary Fitzwilliam, Florence Pemberton, Ethel Brownlow, Mrs. Ed. Mawley, J. B. Clark, Muriel Grahame, Irish Beauty (single), Irish Glory (single), Bettie, Countess Annesley, Countess

of Derby, Dorothy Page Roberts, and Lady Rossmore. At the Royal Horticultural Society's exhibition at Holland House in July last no fewer than four new Roses shown by Messrs. Dickson were granted Awards of Merit. The Gold Medal of the National Rose Society was awarded Messrs. Dickson's new Hybrid Tea Rose Lady Helen Vincent at its Metropolitan exhibition this year.

Gardeners are so much indebted to M. Victor Lemoine, of the Nancy Nurseries, France, for the numerous plants he has raised and introduced into commerce, that we are pleased to see in a recent issue of *Möller's Deutsche Gärtner-Zeitung* an appreciative notice of his work as a hybridiser. The notice is so full and exhaustive that it fills the entire issue of that journal. M. Victor Lemoine, of whom we published a portrait in our issue for July 15, 1899, has been engaged in the cross-breeding of plants since 1852, and



HENRY BALLANTINE, V.M.H.

his efforts have been attended with unusual success.

He was born on October 21, 1823, at Delme, in Lorraine, his father being a gardener. He studied at the College of Vic-sur-Seille, and after travelling for several years he took service with various nurserymen in Germany, Belgium, and France, finally starting in business for himself at Nancy in 1850. In 1885 he became Knight of the Legion of Honour and Officer in 1894. He was honorary vice-president of the Central Horticultural Society of Nancy, and honorary member of the National Horticultural Society of France, and of several other societies in various countries.

The first of his improved plants was a double-flowered *Portulaca* (1852), the first of its race. Then came four or five hybrid *Streptocarpus*, obtained by crossing *S. biflorus* with *S. polyanthus*. At that time the new species which have been so greatly improved by Mr. W. Watson, Kew, Messrs.

Jas. Veitch & Sons, Chelsea, and others were unknown. In 1862, M. Lemoine introduced *Spiraea callosa* alba, and some hybrids that he obtained from *Monochaetum*, among others *M. Lemoinianum* and *M. sericeum* multiflorum; also *Clematis lanuginosa* candida, a cross between *C. lanuginosa* and *C. patens*. In subsequent years his finer crosses and hybrids included many double *Pyrethrums*, which are common plants in gardens to-day, *Spiraea syringæflora*, and *S. intermedia*. In 1866 came the first true double-flowered Zonal *Pelargonium*, "Gloire de Nancy," the forerunner of the double varieties now grown. In 1869 he raised *Abutilon vexillarium variegatum*; he also raised several hybrids between *Begonia Pearcei* and *B. subpeltata*. In 1871 Lemoine introduced the double-flowered *Clematis Lucie Lemoine* into commerce. In 1872 he surprised the gardening world with the first double-flowered tuberous *Begonia*, *B. Lemoinei*, from which in subsequent years *B. Gloire de Nancy* and a number of double varieties were obtained. The year 1878 saw the double-flowered Zonal *Pelargonium* *F. V. Raspail* and the large-flowered varieties *Mme. Thibaut* and *Lucie Lemoine*. In the same year M. Lemoine showed three novelties at Paris which enjoy great favour at the present time, viz., *Syringa Lemoinei*, the first double-flowered Lilac, *Gladiolus Lemoinei* and *G. Marie Lemoine*, the progenitors of the large spotted varieties. The year 1879 saw the hybrids *Philadelphus multiflorus plenus*, *Weigela Emile Gallé*, *Ceanothus aerostat*, and *C. Phare*. In 1882, *Fuchsia Boliviana rosea*, *Pelargonium peltatum* Jean d'Arc, *P. p. La Rosiere*, and *Lilac Mathieu de Dombasle* were raised. The following year *Philadelphus rosæflorus plenus*, *Fuchsia Boliviana nivea*, *Clematis viticella venosa violacea*, *C. v. Kermesina*, and *Gladiolus Masque de Fer* were raised. Between 1882 and 1900, M. Lemoine distributed many new hybrids and cross-bred varieties of *Clematis*, *Syringa* (Lilac), *Montbretia*, *Philadelphus*, *Gladiolus* *Nanceanus*, *Deutzia*, *Spiraea*, Zonal *Pelargonium* (Paul Crampel and others), *Phlox*, *Begonia Gloire de Lorraine* (1893, a cross between *B. Dregei* and *B. socotrana*), *Astilbe*, *Diplacus*, *Gazania*, *Crassula hybrida rosea* (*C. jasminea* × *Rochea falcata*), *Anemone japonica*, *Pæonia*, *Hydrangea*, &c.

Among M. Lemoine's later novelties, perhaps the hybrid *Deutzias*, *Montbretias*, *Gladiolus* and *Syringas* are the most generally cultivated in English gardens.

Apart from his beautiful hybrids and crosses, M. Lemoine has introduced a large number of rare and new species of plants to European gardens, but the mere list of these introductions is more than we can print in these columns.

OUR SUPPLEMENTARY ILLUSTRATION.—*Senecios* form one of the largest genera amongst flowering plants, and the enumeration of the species and their synonyms occupies more than 13 pages in the *Index Kewensis*. Generally the plants are herbaceous, though not always, and the species exhibit such marked differences as seldom occur in a single genus. In the house devoted to succulent plants at Kew may be found *Senecios* which might be mistaken for cactaceous plants. Their construction, however, is of quite a different type to the common garden weed *Senecio vulgaris*—the Groundsel—which attains a height of a few inches only, and to *Senecio Wilsonianus*, which is one of the giants of the race, for the

inflorescence attains to a height of more than 5 feet, and the plants have correspondingly broad leaves that are of a reniform or kidney shape. *S. Wilsonianus* was introduced into cultivation by Messrs. JAMES VEITCH & SONS, through their collector WILSON, who discovered it in Hupeh, Western China, although dried specimens had been previously sent home from that district by Dr. A. HENRY. The plant is perfectly hardy, and forms a suitable subject for planting by the waterside, or in a position in the shrubbery or flower-border where it can be allowed ample room to develop its broad foliage and tall spikes of yellow flowers. In the illustration it will be seen that a small portion of the inflorescence has been drawn natural size by Mr. WORTHINGTON SMITH, and in the left-hand corner at the base a capitulum is shown after being magnified two diameters. The species was described by Mr. W. BOTTING HEMSLEY in *Gardeners' Chronicle*, for September 16, 1905.

THE BOTANICAL MAGAZINE.—The following plants are illustrated and described in the issue for September:—

ACONITUM NAPELLUS, var. *eminens*, tab. 8,152.—This is a variety now described by Dr. OTTO STAFF, who states that it appears to be confined to the limestone zone of the Eifel Mountains. It is by far the most handsome of the numerous varieties or races of *Aconitum Napellus*. The plant is a herb, often 7 and even over 9 feet high, perfectly glabrous, with the exception of the inflorescences. The panicle is very large and compound, 3 to 5 feet long, and the flowers are intensely purplish-blue or sometimes purple or variegated.

ANGRÆCUM INFUNDIBULARE, tab. 8,153.—(See *Gardeners' Chronicle*, 1904, vol. xxxvi., pp. 82, 130; also supplementary illustration to issue for Aug. 20, 1904. The description in the present issue of *Botanical Magazine* is by Mr. R. A. ROLFE.

PODOPHYLLUM VERSIPELLE, tab. 8,154.—This is a Chinese species, now described by Mr. J. HUTCHINSON from a plant presented to Kew in 1903 by Messrs. JAS. VEITCH & SONS, who introduced this species into cultivation through their collector, Mr. E. H. WILSON. The species has a perennial rhizome, annual stem, and large leaves, each with from five to nine lobes. The cyme is umbelliform, sessile, often eight-flowered. The flowers are very showy, being deep crimson.

BIGELOVIA GRAVEOLENS, tab. 8,155.—A shrubby Composite from North America. The species has also been known as *Chrysocoma graveolens*, *Linosyris graveolens*, *Chrysocoma nauseosa*, and *Chrysanthamnus nauseosus*. Mr. W. BOTTING HEMSLEY describes the species as growing to at least 6 to 8 feet high in cultivation. The stem is as much as 2 inches in diameter at the base, much branched upwards. The flowering branches are corymbose, pendulous, tomentose and white. The flower heads are very numerous, and the flowers yellow. Mr. W. WATSON states that the plant was sent to Kew by the Rev. Canon ELLACOMBE in 1900 for identification, and it has now stood for four winters against the wall at the north end of the Herbaceous Ground without any additional protection. Last year it was in full flower in mid-October, and so continued for about a month. It might be called a shrubby Golden Rod, says Mr. WATSON, the big, crowded corymbose clusters of yellow flowers being not unlike those of the *Solidagos*. The species may be easily propagated from stem-cuttings. It is recommended as a shrub for collections of showy and interesting plants, and in more southern localities would probably succeed without even the protection afforded by the wall.

PRUNUS BESSEYI, tab. 8,156.—The plant from which the figure was prepared, writes Mr. W. J.

BEAN, is one of a batch sent to Kew by Professor SARGENT in 1900, from the Arnold Arboretum. They have flowered during the past three years, and, in early May, when the growths of the preceding summer are crowded with fascicles of white flowers, make a charming display. The fruit has not hitherto been produced in sufficient abundance at Kew to count among the ornamental qualities of the plant. The species is a native of the North-Western United States, and is quite hardy in this country. It is recommended as likely to be worth the notice of fruit growers in South Africa and Australia, or wherever the summer conditions approximate to those of Colorado, but the species will not be of economic value in Britain.

FLOWERS IN SEASON.—From Mr. S. ELY, Lavington Park Gardens, Petworth, we have received a selection of well cultivated flowers of Carnations of the American type. Mr. ELY writes: "I am forwarding a few blooms of American Carnations gathered from plants which have been in flower since November of last year. At the end of April, 1907, the plants were placed under a north wall, where they have produced a wealth of flowers all through the summer. My object in sending the flowers is to demonstrate the value of these Carnations for planting in small spaces, providing they are first grown in pots; also to show what useful decorative flowers they produce the whole year round."

From Messrs. ROBERT VEITCH & SONS, The Royal Nurseries, Exeter, we have received flowering sprays of a number of shrubs and other garden plants which are hardy in Devon, including several improved varieties of *Ceanothus thyrsiflorus*, *Eucryphia pinnatifolia*, a very floriferous shrub; *Sollya heterophylla*, a climbing plant, with small blue flowers; *Buddleia variabilis magnifica*; *Chamaebatia millæfolia*, with inflorescence similar to that of a *Rubus* and foliage like the Yarrow; *Ononis fruticosa*; a fruiting shoot of *Coriaria terminalis* (in colour the berries are similar to those of the yellow Raspberry); *Eriogonum racemosum*, and *Pentstemon cordifolius*, a shrubby species, with orange-scarlet coloured flowers that are very freely produced.

Messrs. HURST & SON, 152, Houndsditch, London, send us flowers of a new variety of *Chrysanthemum carinatum* (syn. *C. tricolor*) named Silver Queen. The raisers claim the variety to be distinct from all others of that species in the dwarfness of its habit. The florets are white in their upper halves, the lower portions forming a band of clear yellow. As the plant is an annual, and can be sown in the open, it should prove an acquisition for the flower garden.

Gladioli flowers sent us by the famous Langport firm of KELWAY & SON are as good or better than ever. The large flowers are produced on long spikes, and are of the richest hues of colouring. It would seem as if the highest degree of beauty and size had been reached in these flowers. Among the varieties sent us are King of Gladioli (of a shade of salmon-rose, with a blotch of yellow in the lower segments), Alice Wood (white, flaked with red, and having conspicuous primrose-coloured markings on the three inner segments), Beatrice Kelway (in colour bright rose and white, and of very large size), Langport Wonder (rose, mottled with varying shades; the flower-spike is very large in this variety), Ard Patrick (salmony or orange-red), Eugene Sandow (reddish-rose, with white markings), &c.

A GARDENER'S JUBILEE.—At the luncheon held in conjunction with the Paisley flower show, on September 5, Mr. JOHN MACGREGOR was presented, by his fellow gardeners, with a walking-stick, on the occasion of his 50th year's service as gardener at Barochan.

NATIONAL POTATO SOCIETY.—Mr. W. H. ADSETT, the secretary, reminds us that the first provincial show of this society will be held at the South-Eastern Agricultural College, Wye, Kent, on Wednesday, October 2nd, under the direction of Mr. WALTER P. WRIGHT, the horticultural superintendent of that institution. The South-Eastern and Chatham Railway Company has arranged to issue return tickets from stations within 60 miles of Wye for a single fare and a quarter, on the presentation of a voucher obtainable from the hon. secretary. An opportunity will be afforded the visitors of inspecting the gardens, orchards, and farm attached to the college, where an interesting series of trials is being conducted. In addition to the usual classes for members, and the contests for the "Llewelyn" and "Carter-Findlay" cups, interest is likely to be aroused in a series of vegetable competitions, open to members of the Kent horticultural societies, for which special prizes are offered by nurserymen and seedsmen in the county. At 3 p.m. a conference will take place, at which Mr. M. J. R. DUNSTAN, the Principal of the College, will preside, and deliver the opening address. Schedules and full details are obtainable from the hon. sec., Hatton House, Great Queen Street, London, W.C.

HAMPTON COURT GARDENS.—We regret that in a descriptive note on these gardens, published in the last issue, and owing to a misapprehension on the part of our representative, it was stated that Mr. A. SPRIGINGS would succeed Mr. GARDINER as superintendent. We are definitely informed that Mr. GARDINER's post will be filled by Mr. WILLIAM J. BARLOW, the present superintendent of Greenwich Park, as was stated in a previous issue. Mr. SPRIGINGS will remain at Hampton Court in the capacity of foreman.

THE "BLANCARD" FUND.—Mr. C. HARMAN PAYNE writes as follows: "Some few months ago I made an appeal on behalf of the two grand-daughters of the introducer of the *Chrysanthemum*. It may interest your readers who subscribed to the fund to know that a total of £48 8s. 10d. was received and paid over to the ladies, who have expressed their grateful thanks for the interest taken in their case."

THE COLONIAL GARDEN AT LAEKEN.—The Colonial Garden at Laeken, writes a correspondent, which was founded by the Government of the Congo State in the year 1900 for the purpose of providing for the introduction of new economic plants into the Congo, will take rank with the great botanical gardens of the world, such as those at Kew, Buitenzorg, &c. Here were cultivated quite recently the Quinine plants (*Cinchona*), which have been sent out to Central Africa. Success was not attained without considerable difficulty, and many kinds of Quinine were tried before one of the seeds imported from Buitenzorg gave satisfactory results. One of the most remarkable items in the collection of tropical plants at Laeken are plants of *Landolphia* of great size. Several trees are no less than 17 feet in height, and they would be still higher if they were not topped. The garden also includes several plants imported from Brazil, such as the *Hevea brasiliensis*, which it is hoped may prove suitable for cultivation in the Congo. There are also special conservatories for Coffee plants, Vanilla trees, and for plants and flowers imported from the Congo. Among the latter a Clove tree of exceptional luxuriance is specially noticeable. There is also a remarkable collection of *Sansevieras*. In the same house is the finest of all the ornamental plants of the Congo, the *Encephalartos Laurentianus*. Another speciality of the garden is the collection of five principal kinds of *Gutta-Percha* plants. A visit to the Colonial Garden of the Congo Government at Laeken will be sure to interest every botanist who happens to pay a visit to Brussels.

DECORATION FOR MR. SCHNEIDER.—We are pleased to learn that Mr. GEORGE SCHNEIDER, the President of the French Horticultural Society of London, has just received from the French Government an honorary distinction in recognition of his services to horticulture. Mr. SCHNEIDER, who was appointed a Chevalier of the Mérite Agricole about 10 years ago, has done a useful work in promoting good feeling between the gardeners of this country and those abroad, besides devoting much of his time to the society of which he has been the president for nearly 20 years. On both sides of the Channel Mr. SCHNEIDER has many friends, and they will be glad to learn that by a decree dated August 31 last the French Government has promoted him to the rank of Officier du Mérite Agricole.

FATALITY TO A DAHLIA EXHIBITOR.—As a party of exhibitors returning from the National Dahlia Society's exhibition at the Crystal Palace were passing through South Norwood on the night of September 7, the horse attached to the van in which they were travelling took fright, with the result that Mr. ALBERT THOMPSON, of Cuckoo Lane, St. George's, Bristol, was killed. The driver, his son, and two other men were injured. One of the injured persons, Mr. AARON WEBB, had, in conjunction with the deceased, won some of the most valuable prizes in the amateurs' classes, as will be seen on reference to our report on p. 206.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, ante, pp. 84-90.)

(Concluded from page 182.)

8.—ENGLAND, S.W.

MONMOUTHSHIRE.—Standard Apple trees in some orchards are badly infested with caterpillar, which a systematic spraying in the winter would have prevented. Pears, although not a heavy crop, are clean, and the trees are healthy. Peaches and Nectarines set very freely, and these fruits required severe thinning. Strawberries have given a heavy crop of fine fruits, the varieties Climax and Trafalgar being especially good. Our soil is a stiff, retentive clay. *W. F. Woods, Llanfrechfa Grange Gardens, Caerleon.*

—Trees of many of the best varieties of Apple such as Allington Pippin, Bismarck, Ecklinville Seedling, Lord Derby, Lane's Prince Albert, and Newton Wonder have scarcely any fruit. Most of these varieties have borne good crops during the past three years, which may account to some extent for their failure this year, but the principal reason is that during the time the trees were in blossom the weather was very cold, and severe white frost was present on more than one occasion. Pears, also all stone fruits, are exceptionally heavy crops. During the time the trees were in bloom, the weather was fine and warm. *John Basham, Fair Oak Nurseries, Bassaleg, Newport.*

SOMERSETSHIRE.—The soil in this district is generally a stiff, calcareous loam, resting on the limestone. There are many Apple orchards in this neighbourhood, the fruit being used chiefly for cider-making, but the majority of the trees are in bad condition from lack of pruning, cleaning, &c. Wellington (Dumelow's Seedling) fruits well in this district, and this Apple can be kept for a long time in good condition. I have only recently used the last of the previous season's crop. Aphids of all kinds have been very troublesome on fruit trees. Strawberries ripened indifferently. Newly-planted fruit trees have suffered considerably from the unseasonable weather. These remarks include observations extending to Langport, Sparkford-Butleigh, and Somerton. *Geo. H. Head, Kingdon Manor Gardens, Taunton.*

—The season being late favoured the setting of the blossom on fruit trees, but later, continued cold weather caused a great check to the trees, and many of the fruits dropped at about midsummer. The warm weather of July pro-

moted new vigour, and favoured the swelling of the fruits. Free-bearing kinds of Apples such as Lord Grosvenor, which cropped well last year, have heavy crops of fruits this season, and I am convinced that some varieties of Apples withstand low temperatures better than others. Plums and Apricots set an enormous crop. Strawberries suffered from the dry weather of last autumn. Potatoes have disease in the haulm on the high ground, but are not affected in our low situation. *J. Crook, Forde Abbey Gardens, Chard.*

WORCESTERSHIRE.—The soil in this district is a sandy loam, overlying the new red-sandstone formation. This is the most remarkable season for stone fruits that I remember, the fruits being exceedingly abundant and of good quality. Apples, although of good quality, are not plentiful: some Apple trees are overlaid with fruits, others are carrying scarcely any. The weather at the time Apple trees were in blossom was not so favourable as at the time when trees bearing stone fruits were flowering, consequently the pollen was not so effective. Pear trees have suffered from the Pear midge. The fruits of all trees are generally clean and of good quality, the growth of the trees being very healthy. Small fruits such as Red and Black Currants, Raspberries, and Gooseberries are very fine, and the crops of these are heavy. Much of the blossom and many of the early fruits of Strawberries were damaged by the rains. *A. Young, Witley Court Gardens, Sturport.*

—The Apple crop is almost a failure in this district, and only a few trees here and there have any fruits. The variety Worcester Pearmain has the best crop. The trees blossomed well, but the flowers appeared small and imperfect. The essential organs of the flowers were undeveloped, probably owing to the extreme drought of August and September, 1906, when the trees cast their leaves prematurely. This, added to a cold, sunless period, and cold winds, are the causes of the failure of the Apple crop. Apricots were never healthier nor more abundantly fruited. Peaches and Nectarines are plentiful and clean. Pears are the heaviest crop of these fruits we have had for several years past. The Pear midge this season was less in evidence: a dressing of Vaporite was dug in around the roots of the trees just as the midge was about to emerge from the chrysalis; this application will be repeated another year. Strawberries were stunted in growth by the cold weather. *W. H. Humph, V.M.H., Madresfield Court Gardens, Malvern.*

WALES.

CARNARVONSHIRE.—This is the worst year for hardy fruit crops I have seen for upwards of 40 years. Mildew has greatly injured the young growths of Apple trees and Plum trees. *W. Speed, Penrhyn Castle, Bangor, N.W.*

GLAMORGANSHIRE.—The only varieties of Apples which are carrying good crops are Cox's Orange Pippin, James Grieve, and Bramley's Seedling. Pears are quite up to the average in quantity, and very good in quality: the same remarks apply to Plums. I never saw better crops of Peaches and Nectarines. All varieties set well, and the foliage is remarkably free from blight and blister. Apricot trees are also heavily fruited. Strawberries were far above the average in quantity, but deficient in flavour, owing to the wet, sunless weather during the time the berries were ripening. Nuts are plentiful and good. Our soil is of a light nature, with a gravelly sub-soil. *R. Milner, Margam Park Gardens, Port Talbot.*

—Apple, Pear, and Plum trees all produced an abundance of blossom, but the continued wet weather and low temperatures have spoiled the fruit crops. Gooseberries are plentiful, and of fine quality: the same remarks apply to Raspberries, Currants, and Cherries. Peaches and Nectarines are also very good, and the trees are free from blight. The soil here is a rather heavy loam on a rocky sub-soil. *C. T. Warrington, Penllergaer Gardens, Swansea.*

MERIONETHSHIRE.—Plum trees and early varieties of Pears blossomed freely, but the young fruits were spoilt by frost. The fruit trees generally in this district are badly infested with aphids, and this pest is especially prevalent on Black Currants. All the crops are very late,

owing to the wet and dull season, and what promised to be a record year (judging by the bloom prospects) has proved disappointing. I never remember such heavy crops of Red and Black Currants, Gooseberries, and Raspberries. The ground here was in a sodden and cold condition until July 11. *John S. Higgins, Rûg Gardens, Corwen.*

MONTGOMERYSHIRE.—Apples are very plentiful in some places around here, and splendid crops of Lord Suffield, Blenheim Pippin, and others are seen. Pears are fairly plentiful, but some varieties, including Louise Bonne of Jersey, Seckle, Winter Nelis, Jargonelle, and Marie Louise are sparsely cropped, although the trees have not failed to fruit for several years past. Among Plums, Greengage are fairly good, Magnum Bonum, both the red and the white kinds, are bad. Early Rivers good, and Victoria bad. The last named has proved the most reliable Plum in this district in other years. Peach, Nectarine, and Apricot trees are carrying splendid crops, but the fruits will be late in ripening. Among small fruits, Black, White, and Red Currants are very heavy crops, but the fruits are not so large as usual. Our soil is a dark loam of a moderately light texture. *G. L. Evans, Vaynor Park Gardens.*

PEMBROKESHIRE.—All hardy fruits are very good, with the exception of Apples and Pears, which suffered badly from hailstorms, followed by sharp frosts. We have an abundance of small fruits. Gooseberries and Strawberries were never better. Royal Sovereign Strawberry is by far the best of the many varieties grown here. Laxton's Fillbasket also does well. Our soil is a light loam resting on rock. *W. A. Baldwin, Clynfew Gardens, Boncath.*

RADNORSHIRE.—Late frosts are accountable for the loss of our Apple crop this year. A few Apple trees only are carrying a crop of fruits, the best being Cellini, Duchess of Oldenburgh, and Lane's Prince Albert. Trees of Louise Bonne of Jersey and Knight's Monarch Pears have heavy crops. Other varieties have about an average quantity. Wall trees of Apricot, Peach, and Nectarine are abundantly fruited, and the crop is the heaviest for several years past. Our soil is a good, deep, rather light loam overlying the red sandstone. *J. MacCormack, Maesllwch Castle Gardens, Glasbury.*

IRELAND.

ANTRIM.—Pear trees produced a large quantity of blossom, and the fruits set well, but the inclement weather during May and June, with frequent hailstorms caused most of the fruits to drop. A few varieties of Pears are carrying an average crop, including Beurré Diel, Beurré Hardy, Beurré d'Amanlis, Gansell's Bergamot, and Louise Bonne of Jersey. Plums are a very light crop, and the trees are badly infested with aphids. In some parts Apples are plentiful, and in other districts they are a total failure. The blossom of Apple trees rotted on the branches. Our soil is a stiff, cold, tenacious loam on a very retentive clay sub-soil. *J. MacLean, Shanes Castle Gardens, Antrim.*

GALWAY.—The season has been the most unfavourable during 50 years' experience. Cold winds at the beginning of May, accompanied with heavy hailstorms, ruined the crops of Plums, Pears, and Damsons. Apple trees produced scarcely any blossom, owing, probably, to the heavy crop of last year. Small fruits are better. Strawberries were late in ripening. The soil here is of a light texture, and rests on limestone; it is very poor in quality. Although spraying has been practised, blight is appearing on Potato haulm. *Thomas Dunne, Lough Cstra Castle Gardens, Gort.*

TYRONE.—The season has been one of the most backward on record. May and June gave scarcely one fine day, and the temperature only exceeded 60° on about 10 days in the two months. The fruit crops are all very late. No Strawberries were ripe until July 10, and the crop was very poor. Apple blossom did not set well, and many of the fruits that did set have since fallen, owing to cold and wet. Pears have set fairly well. Plum trees are generally carrying heavy crops; the principal kind grown about here is Victoria. Gooseberries are an enormous crop, and other small fruits, including Black Currants, are also heavily fruited. The Goose-

berry-mildew has appeared in this locality. Our soil is a heavy, clayey loam. *Fred. W. Walker, Sion House Gardens, Sion Mills.*

CLARE.—All fruit trees produced a quantity of

weather, accompanied by violent winds and hailstorms, caused the damage. Strawberries and bush fruits set large crops. Bush fruits have ripened well, but fully half the crop of Strawberries was destroyed by the unfavourable

CORK.—The Apple crop in the South of Ireland is the worst for years past. Most of the Apple orchards are completely bare of fruits. Pears are equally bad, but Gooseberries, Currants, and Plums are plentiful. Peaches out-of-doors are a complete failure. The few Apples which set on the dwarf garden trees have been attacked by a destructive insect, which bores into the fruit, causing it to fall off. *A. C., Co. Cork.*

—Periodical visits to the South of Ireland extending over a number of years, and careful observation of the soils and climate, convinced me that the culture of Apples could be carried on there with success, and when some few years ago an opportunity arose for the acquisition of a small holding in County Cork, I at once planted several varieties of bush-trained Apple trees. My first experiment was with 12 varieties, including six of dessert and six of culinary kinds. The dessert varieties included Allington Pippin, Cockle Pippin, Cox's Orange Pippin, Gladstone, Washington, and Worcester Pearmain. For kitchen varieties I selected Bismarck, Loddington, The Queen, Stirling Castle, Tower of Glamis, and Warner's King. Of the table Apples, Allington Pippin, Cockle Pippin, and Worcester Pearmain were a distinct success; Gladstone and Washington fairly so, but Cox's Orange Pippin an unmistakable failure. Stirling Castle has proved a success, but Bismarck, Loddington Pippin, Tower of Glamis, and Warner's King have never succeeded. The Queen Apple seems peculiarly adapted to this neighbourhood, and flourishes like none other. On an adjoining piece of land I subsequently planted a much larger variety of trees, but these have not been planted sufficiently long for me to form a fair opinion of them, although many of them promise well. One prominent feature is the absolute failure of Cox's Orange Pippin, and this not only in my own case, but in that of a large adjoining grower. I am disposed to think that the soil is too good, and have been told by a man of the widest experience in Kent that he finds this variety succeeds best on poor soils. The present year's crop will be watched with interest, for in this district the weather during the spring has been abnormal; severe frosts, continuous cold winds, and heavy hailstorms have damaged the Apple crop, and a great scarcity of this fruit exists. Whilst some varieties are fairly well cropped, others have failed altogether, and a severe attack of Codlin moth has destroyed the greater part of the fruit which did set. The effect of the weather is peculiarly noticeable in the case of Allington Pippin; this variety, which has done well up to this year, is a total failure, and the severe climatic conditions existing in April and May so seriously injured the trees that I am doubtful if they will recover. The district included in the valleys of the Blackwater and Bride cannot be surpassed for Apple culture, and evidences exist in the remains of ancient orchards and the traces of cider-making plant, that at no very remote date Apples were largely grown, and cider-making extensively carried on in this part. With the advantages gained under the Land Purchase Act, this branch of Agriculture may be revived, and an industry resuscitated which should greatly benefit all classes. *Clement B. Broad, Co. Cork.*

ARCTOTIS × REGALIS.

THE hybrid *Arctotis* illustrated at fig. 87 was raised from a cross effected by M. Sprenger, of Vomero, near Naples, between the species *A. aureola* (orange coloured) and *A. stoechadifolia* or *grandis*, as it is better known in gardens (white, with mauve colour on the exterior of the segments). At the last meeting of the Royal Horticultural Society, flowers were shown by Sir Trevor Lawrence, Bart., Burford (gr. Mr. W. Bain), when an Award of Merit was recommended the hybrid after an inspection by the Floral Committee. The size of the flowers may be seen in the illustration; they are pure white, except for the purple disc, and an extremely narrow band of yellow on the ray florets immediately around the base of the disc. On the exterior of the ray segments there is a suspicion of pale purple. Each flower is produced on an erect stem, more than 1 foot in height. Mr. Gumbleton, writing from



FIG. 87.—ARCTOTIS × REGALIS: FLOWERS WHITE WITH A YELLOW BAND AROUND THE PURPLE DISC.

blossom, but owing to the unseasonable weather at the flowering period, the crops of Plums, Pears and Apples were ruined. The district was free from spring frosts, but the long, cold, wet

weather. Our soil is a heavy and retentive loam overlying a sub-soil principally of cold, retentive clay. *Alfred Barker, Carrigoran, Newmarket-on-Fergus.*

Belgrove, Queenstown, states that the flowers of *A. X regalis* are not so large as those of *A. aureola*, and that the hybrid's best quality is that of free-flowering. Mr. Gumbleton thinks that *A. regalis* may be described as a "perennial form of its annual parent. *A. stoichadifolia grandis*, having obtained its perennial habit from *A. aureola*."

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

"**SILVER LEAF.**"—The opinion seems to be held very generally that a tree, when once attacked by silver leaf, never recovers; and in answer to certain questions on the subject which were circulated a short time ago, none of our English correspondents were able to mention any instance of recovery as having come within their knowledge. A correspondent from New Zealand, however, mentioned several such instances, and the following facts will show that recovery in this country also is by no means uncommon. A plantation at Harpenden, where silver leaf had been previously unknown, was badly attacked by it in 1905. Of the trees which had been attacked 14 were left standing at the beginning of this year, 12 of them being well-grown standards of the Victoria Plum, some 16 years old, and the other two dwarf Damson trees. Of these 14 trees four now show no signs of silver leaf, the recovered trees being three Victoria Plums and one Damson. Most of the Victorias had all their branches lopped off close to the stems in the winter; but all those that have recovered are trees which were left intact. This is probably accidental, and it would not be safe to conclude, without further evidence, that the removal of affected branches does not help the recovery of the tree. Out of a dozen Plum trees some 15 years old, at Ridgmont, which were affected last year, only one has recovered; but in a plantation of two-year-old trees of Monarch, Czar, Early Prolific, and Victoria Plums, the percentage of recovery has been very large. Forty-eight of these trees had been inoculated with the fungus *Stereum purpureum*, and 38 of them had, in consequence, become silvered: nine of the 38 died and were removed, the fungus having made its appearance on the dead wood. This left 29 trees standing which had been affected last year, and of these as many as 14 show no signs of silvering now. A tendency to recover is also shown in the 15 trees which are still silvered, for the percentage of their foliage which was affected last year was, on the average, 77, and it is now only 42. The trees which have recovered entirely were, as might be expected, those which were least affected, though there are exceptions to this rule; and there are also exceptional trees which show more silvering now than they did last year. Probably the present season has been exceptionally favourable for recovery, just as 1904 and 1905 seem to have been exceptionally favourable for the spread of the disease. A remedy for silver leaf has lately been suggested in all seriousness, which consists in boring a hole into the heart of the tree and stuffing it with iron sulphate. Remedies such as these savour a little too much of the quackery of the Middle Ages. Trees which have been thus treated may, of course, have recovered, but only in spite of, and not in consequence of, the treatment, for recovery, as is seen, is possible, and not very infrequent, without any treatment at all. *Spencer Pickering.*

TRANSPLANTING SEEDLINGS.—In many instances transplanting is neither economical nor profitable, especially during dry weather. It is the usual practice to transplant Cabbages twice, once from the seed-bed to a growing quarter and again in October to their permanent quarters. One planting should be sufficient. A thin sowing should be made on clean ground that has had plenty of Hop manure incorporated with it. The seedlings will develop an abundance of fibrous roots, so that when finally planted out in October their success is assured. Another method is to partially lift the plants with a fork during September when the ground is moist and the weather dull, and afterwards carefully tread them in again. This practice favours the development of new roots and prevents the plants from "bolting" after they are finally planted. This practice may

also be applied to Cow or Cattle Cabbage. In the case of biennial and annual flowers, thin sowing has its advantages when good seeds are used. Annuals sown in groups or patches can be suitably thinned, and sown thus they develop into finer specimens than those that are transplanted. Biennials can be sown in lines drawn 1 foot to 18 inches apart. The seedlings can be thinned from 3 to 6 inches apart according to the size of the plant. A partial lifting and treading the plants in again in spring, such as was recommended for Cabbages, will ensure a fibrous root-growth previous to replanting. *J. D. G.*

HYDRANGEAS IN TUBS.—On p. 152 Mr. A. R. Pearce states that during a recent visit to Boughton Park Gardens, he saw plants of *Hydrangea Hortensia* each carrying over 100 fully-expanded inflorescences, with others in the bud state. In these gardens are seven plants of this *Hydrangea* in tubs. The specimens measure from 6 to 8 feet in diameter, and collectively the plants are carrying 1,379 fully-expanded flowers and buds. One plant has 223 heads of bloom, and another 206. The plants, for want of a better accommodation, were stored during last winter in a low open shed, and the only other protection they had was during severe weather, when a mat was hung round them. The principal item in the successful culture of *Hydrangeas* is to give them an abundance of water during their growing season, and to feed them with a little artificial manure. *E. S. Pigg, Little Tangle Gardens, near Guildford.*

PRIMULA OBCONICA.—Attention is directed to the poisonous properties of this plant by Mr. G. Burrows, at page 173. The hands when affected readily convey the poison to other parts of the body, and in this manner the eyes, nose, mouth, &c., may be speedily affected. The irritation can in a great measure be allayed by an application of carbolic ointment, but care should be taken not to break or rupture the pustules. I suffered for several years from the poison of this plant before I found what was causing "my disease" by reading a note on the subject in the *Gardeners' Chronicle*. Since that time I have handled the *Primula* on two occasions only, once purposely for experiment, and once accidentally by the leaves brushing the hand when passing the plants. On each of these occasions I experienced a severe attack of what is erroneously called eczema. *Primula sinensis* will affect some persons in the same manner. *E. H. Jenkins, Hampton Hill.* [We have received many more letters on this subject, which in the main bear out statements that have already been made by our correspondents.—ED.]

THE PINK-FLOWERED GLOVE CARNATION.—Mr. C. Young, on p. 188, correctly stated the origin of this variety. During the 14 years that I was at Warren House, Kingston-on-Thames, border Carnations were grown in large numbers, especially the old crimson Glove which was a great favourite of the late Lady Wolverton. It was, I think, in 1887 that I found one of the spikes from a crimson Glove Carnation showing pink flowers (the other flowering stems on the same plant were all crimson flowers). I layered the two or three young shoots and from these I eventually raised enough specimens of the pink-flowered variety to furnish several large beds. I have never noticed in this variety any signs of reversion to the crimson form. Being a purely vegetative sport the habit was exactly that of its parent, but the flowers were a clear shade of pink. I intended to name it "Lady Wolverton," but understood at that time there was already a pink-flowered Glove-scented Carnation in existence, and as the nurseryman's catalogues mentioned a "Blush Clove" I decided not to do so, but continued to cultivate it under the name of "Pink Glove." The pink-flowered Glove Carnation mentioned by Mr. Alex. Dean, on p. 172, probably came, in the first instance, from Warren House, as during the sale of plants in 1894 many plants were distributed in the immediate neighbourhood. *Geo. Woodgate, Rolleston Hall Gardens.*

NEW INVENTION.

MR. J. CAMPBELL POOL, of 15, Carrs Lane, Birmingham, has sent us a new garden tool for transplanting small plants. The implement consists of a hollow cylinder, having handles at one end, the use of which is to enable the operator to push the tool into the ground, and by a twist remove a core of soil. This is pushed from the cylinder by another smaller one. In transplanting, the operation is the same, the "head" of the plant being drawn through the top of the tool, and the entire soil and roots removed to fit a corresponding hole that has already been made.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

SEPTEMBER 3.—*Present:* E. A. Bowles, Esq., M.A., F.L.S. (in the chair); Dr. A. B. Rendle; Messrs. A. Worsley, W. Cuthbertson, A. W. Sutton, H. T. Gussow, J. T. Bennett-Poë, J. Odell, G. Massee, G. S. Saunders, and F. J. Chittenden (hon. sec.).

Mildew on Maple.—Mr. H. T. Gussow showed leaves of a species of *Acer* attacked by the conidial form of the fungus *Uncinula aceris* so frequent on *Acer campestre*.

Currant leaves diseased.—Mr. SAUNDERS showed leaves of Currant attacked by the fungus *Gloeosporium ribis*, which Mr. Gussow stated had recently been found to be a stage in the life history of the fungus *Pseudopeziza ribis* (see fig. in *Gardeners' Chronicle*, Sept. 7, p. 180).

Propagation of Potato diseases.—Mr. CUTHBERTSON showed the produce of two tubers of Potato which had been sent to the committee last year attacked by the fungus causing "winter rot." Both tubers had grown normally, and had produced a fair crop. He proposed to keep these tubers through the winter in order to discover whether or not the disease would appear in them. Mr. SUTTON observed that in certain experiments carried out by him at Reading this year it was found that tubers of Potato attacked by the fungus *Phytophthora infestans*, and employed as sets, yielded about 70 per cent. of normal plants free from disease.

Mendelian laws of inheritance.—Mr. WORSLEY brought up this question with reference to the colours of certain Bean flowers which he exhibited, and the need for further extended careful experiment was insisted upon.

Fig leaves diseased.—Mr. BOWLES showed leaves of the fruiting Fig much disfigured by irregular brown and yellow-brown patches of variable size. The appearance is due to the attacks of a fungus, *Cercospora Bolleana*, which develops its fructification on the dead leaves, and hibernates in the stem of the plant, so that it is carried over from one year to the next.

Malformation of Myosotis.—Mr. BOWLES also exhibited a specimen of *Myosotis palustris*, which he had collected in Suffolk, near Ipswich, having the calyx lobes much enlarged, and the spike somewhat lengthened. Each inflorescence on the plant had exhibited the same structure.

Mint rust.—Plants of Peppermint from near Dorking were sent badly attacked by the Mint rust, or "snuff," as the trouble is locally called. The small reddish spots which occur on the leaves in abundance at this season of the year are the uredo form of the fungus *Puccinia menthae*, and the mycelium of the fungus hibernates in the underground portions of the plant, so that no cure can be suggested. If external conditions are favourable, the disease is sure to make itself evident in the succeeding year.

Galls on Walnut leaf.—Mr. W. C. WORSDELL sent from Westmoreland leaves of *Juglans regia* having rather large swellings on the upper surface of the leaf with corresponding hollows on the lower surface. These malformations, which are frequent on Walnut leaves, are due to the attack on the leaf of a mite, *Eriophyes tristralis* var. *erinea*.

Gooseberry-mildew.—Dr. C. B. FLOWRIGHT sent shoots of Gooseberry badly attacked by the mildew, *Microspora grossulariae*, the well-known European Gooseberry-mildew, with the following note: "These shoots were gathered from a garden which a friend of mine planted some years ago with fruit trees and Gooseberry bushes. The latter became affected with a mildew so badly that they had to be destroyed because they bore no fruit, and if by any chance they did so it never ripened. When the American fungus appeared in this county (Norfolk) one naturally suspected it had been the cause. It so happened that a score or two bushes had been left in the garden, for although they never ripened fruit yet they bore a sufficient quantity to pay for gathering whilst still green. On specimens of the bushes examined during last winter no traces of the winter state of *Sphaerotheca morsuvæ* were to be found, nor is it present now. The moral is, do not despise old enemies. Here is an instance in which hundreds of young

bushes in the fruit-bearing stage were destroyed because they were affected by a fungus with which I was acquainted as a boy. One is inclined to ask, would it not have paid to have sprayed them?"

Change of colour in germinating Acorns.—Dr. PLOWRIGHT also sent specimens illustrating the following observations: "The colour which germinating Acorns often assume is frequently considerable. The specimens sent herewith were gathered near King's Lynn in the spring of the present year. A deep reddish tint more than usually distinct was the cause of their being examined more carefully, when it was seen that not only was the external surface coloured red, but that in some places distinct yellow and greenish shades were observable. The coloration is external, and is possibly due to some form of oxidation." The coloration referred to was still very distinct, showing that it is persistent for many months.

British dye plants.—Dr. PLOWRIGHT also sent skeins of worsted dyed with British wild plants: (1) bore a delicate shade of light green produced from the young flower heads of *Phragmites communis*, the common Reed, moribund with alum. Previous experiments with older flower heads gave a much darker colour. (2) was of a dark green colour (olive), the result of treatment with iron sulphate following the treatment of No. 1. (3) *Bidens tripartita* is not mentioned by Linnæus as a dye plant, but it gives a yellow more approaching orange than that given by other British dye plants. (4) *Chrysanthemum segetum* gives a yellow more like that of other dye plants, but it is not noted by Linnæus as a fast colour.

Malformed inflorescence.—An interesting specimen of *Sempervivum spinulosum* came from the Hon. WALTER ROTHSCHILD, in which the inflorescence bore only a few flowers, and was crowned by a rosette of foliage leaves quite like the rosettes at the base of the plant. The lower leaves of the rosette bore flower buds in their axils.

TRIAL OF CANNAS AT WISLEY.

SEPTEMBER 6.—The third and final inspection of the trial of Cannas in the Wisley Garden was made on the above date, the following members of the FLORAL COMMITTEE being present: W. Marshall, Esq. (chairman), and Messrs. George Nicholson, W. Bain, C. T. Druery, T. W. Turner, J. Douglas, J. Jennings, W. Howe, and R. Hooper Pearson.

Awards of Merit were recommended to the four varieties whose names follow:—

Canna "Venus."—A fine flower of a soft shade of rose, with mottling of white around the margins of the segments. Height of plant, 2 feet 6 inches.

C. Hesperide.—The flowers of this variety are orange or orange-red coloured, and are equal to the best of this type. Height of plant, 2 feet 6 inches.

C. Duke of York.—This variety is one we commented favourably upon in the issue for August 24. It failed to get an award at the previous inspection. The flowers are of a dull shade of magenta, but have bright yellow-coloured margins. The foliage is green, and the plants have a sturdy growth scarcely 2 feet in height.

C. Burbank.—This variety is in general cultivation, but has not previously been given an award beyond that of three marks. The flowers are of large size, but somewhat lacking in substance. The colour is canary-yellow, with sparse, red spotting.

Remarks were again made upon the good cultivation seen in the Cannas generally, and on a question being addressed to Mr. Wright as to the kind of manure that had been applied to the plants, it was elicited that exclusive use had been made of Peruvian guano.

Notes upon the earlier inspection of the Cannas will be found in our issue for August 24, p. 135.

Awards of Merit were also recommended to the following three varieties of Perennial Aster, a variety of East Lothian Stock, and a variety of Larkspur:—

Aster "White Queen."—Recommended for its earliness in flowering. Flowers white, with yellow disc, the disc subsequently turning quite brown.

A. "Mrs. Davis Evans."—Recommended for its early flowering and compact habit of growth. Height, 2½ feet. Colour of flowers, mauve-purple.

A. "Miss Stafford."—Recommended for its early flowering. Height, 2 feet. Colour of flowers, a pinkish shade of red.

It was noticed that some varieties were badly mildewed, yet others adjacent to them were perfectly free from the fungus.

East Lothian Stock, "White Wallflower Leaved."—An Award of Merit was given to an exceedingly good strain of this type of Stock. The seeds were sown in spring, and the tallest plants were only 1 foot in height, yet some had produced as many as nine excellent spikes of good flowers.

Larkspur.—The strain of the annual Larkspur known as "Carmine Empress" having proved usually true, an Award of Merit was granted it. The plants were from 4 feet to 5 feet in height, and were much admired.

NATIONAL DAHLIA.

(Concluded from page 192.)

SEPTEMBER 5, 6.—We were enabled to insert in our last issue the names of the winners in the more important classes. Judged from a general point of view, the show was about equal, or very nearly equal, to the best of its predecessors. The exhibits were arranged in the southern end of the Palace, instead of the central transept as last year. The attendance of visitors was large throughout the day, and in the evening the building was thronged, but other attractions were no doubt largely responsible for this big gathering.

New seedling Dahlias were not lacking, and amongst the Cactus-flowered type were several excellent novelties.

As recorded in the last number, the best display of 48 blooms of Show varieties were shown by Mr. JOHN WALKER, Thame, Oxon. There were three contestants in the class, the others being Mr. W. TRESEDER, Cardiff, and Mr. MORTIMER, Rowledge, Farnham, Surrey, who were awarded the 2nd and 3rd prizes in the order named. The winning flowers were a remarkably fine exhibit, the best examples being Perfection (yellow, tinged with reddish-brown), John Walker (white), J. C. Reid (bronze, tinged with rose and with a rose reverse), Harrison Weir (yellow), Mrs. Foreman (magenta), Diadem (crimson), Duke of Fife (scarlet), John Hickling (yellow), Arthur Rawlings (crimson), Mrs. Gladstone (flesh pink, a most beautiful shade), and Mrs. David Saunders. Other varieties shown by Mr. WALKER included: Mrs. W. Slack, Kathleen, Mariner, Miss Cannell, Golden Gem, Henry Clarke, Mr. Glasscock, Virginal, T. J. Saltmarsh, Victor, Mrs. W. Trese, John Rawlings, Shirley Hibberd, the Reverend, Harbinger, Mrs. Morgan, Thomas Pendered, Dr. Keynes, Duchess of York, Ethel Britton, J. T. West, Mrs. F. Foreman, Hero, Lord Salisbury, Blush Gem, Comte de la Saux, and a crimson-coloured seedling variety.

In the class for 24 blooms for Show varieties there were seen four exhibits. The best blooms, as stated last week, were shown by Messrs. KEYNES, WILLIAMS & Co., Salisbury. Some of the flowers in the 1st prize collection were very large, especially those of Mr. Glasscock (purple), Daniel Cornish, and Rebecca (crimson). Other prominent blooms were those labelled Perfection, A. Rawlings, Harrison Weir, George Barnes (a very fine self-coloured variety), Thos. Hobbs, John Hickling, Henrietta (soft rose-pink), and Warrior (a very handsome shade of scarlet).

FANCY DAHLIAS.

The largest class, that for 18 blooms of distinct varieties, attracted two exhibitors only, viz., Mr. WILLIAM TRESEDER and Mr. WALKER, who won in this order. The 1st prize collection was uniformly good, the colours of the flowers being especially fine. Notable varieties were: John Britton and Frank Pierce, the two top corner blooms, also Emin Pasha, Matthew Campbell, Gaiety, John Cooper, Watchman, Edmund Boston, Lottie Eckford, Mrs. Saunders (yellow florets tipped with white), Comte de la Saux, Sunset, Comedian, Rev. J. B. M. Camm, Mabel, and Distinction.

The smaller class for 12 blooms of Fancy

Dahlias was better contested, as five exhibits were seen, the best being shown by Messrs. J. CRAY & SONS, Frome. Rev. Camm, B. Bell, Prince Henry, F. W. Girdleston (a fine big flower of a rich plum colour), Mrs. Saunders, F. Pierce, Sunset, Mabel, Dorothy, Hero, and H. Clarke were notable examples in the premier display. Second, Mr. MORTIMER, with an evenly-matched stand of flowers.

A class was provided for Show and Fancy varieties intermixed. This brought forth a poor competition, only two exhibits being staged, the best by Mr. J. R. TRANTER, Henley-on-Thames.

CACTUS DAHLIAS.

The principal class for Cactus-flowered varieties was that for 18 varieties, in bunches of six blooms each. The chief honour in this class has been won on several former occasions by Messrs. J. STREDWICK & SON, Silverhill Nurseries, St. Leonards, who were again the best exhibitors. All the varieties shown were raised by the exhibitors, including 11 new flowers presented for the first time this season. Of these varieties three received the Society's Certificate of Merit, and one of these, to which the name of C. E. Wilkins was appended, was awarded a Silver Medal as being the best bunch of Cactus Dahlias in the professional classes. A description of this variety will be found under Awards. The other varieties were: Ivernia, Rev. A. Bridge, Harold Peerman (yellow), Ruby Grinstead (pink, with a yellow centre), Helium (bronze, merging to a yellow in the centre), Dorothy (pink, a fine big bloom), Chamois (buff, with orange-coloured centre), Mrs. F. Grinstead (purplish-mauve, with magenta showing on the tips of the florets), Mrs. Macmillan (pink), J. B. Riding, Clara (pink), Dr. G. G. Gray (scarlet), Mrs. W. H. Raby (creamy-white), George Gordon, and Alfred Dyer. 2nd, Messrs. J. BURRELL & Co.; 3rd, Messrs. J. CHEAL & SONS, Crawley.

MESSRS. KEYNES, WILLIAMS & Co. won the 1st prize in the class for 48 blooms of Cactus-flowered varieties, and Mr. HUMPHRIES in the smaller class for 24 blooms.

POMPON VARIETIES.

Class 11 was for 24 varieties of this type, and it brought forth four displays. The best was put up by Mr. C. TURNER, Royal Nurseries, Slough. The varieties were well-known kinds, such as: Phyllis, Tommy Keith, San Toy, Mignon, Clarence, Jessica, Josephine, Bacchus, Isabel, Hecla, Ideal, Cyril, Thora, Sybil, Asperia, Minnie, Romulus, Mary, Marietta, Queen of Whites, Darkest of All, and Daisy. Second, Mr. SEALE, with Jessica, Harbinger, Trojan, Bacchus, Silvia, &c.

Mr. BURRELL was 1st in the class for 12 varieties.

SINGLE DAHLIAS.

The Single varieties were represented by several good displays, although they were not so numerous as the Show and Cactus types. In the class for 24 varieties Messrs. J. CHEAL & SONS, Crawley, won the 1st prize with an evenly-balanced array of blooms, prominent varieties being Alice Castle, Formosa, Kitty, Columbine, Eclipse, Tommy, Miss Roberts, Darkness, &c.; 2nd, Mr. M. V. SEALE, Sevenoaks; 3rd, Messrs. J. CRAY & SONS, Frome.

AMATEURS' CLASSES.

The winners of the Silver Challenge Cup in Class 15, for 24 blooms of Show Dahlias, as announced in the last issue, were Messrs. WEBB & THOMPSON, Kingswood, Bristol, these gentlemen being the joint owners of one garden. Their flowers were splendid examples, having remarkably good build and excellent colouring. The varieties were similar to those we have enumerated in the nurserymen's classes. (See report of fatal accident on p. 203.)

Mr. W. E. PETERS, The Hospice, Holmhurst, St. Leonards, won the Silver Challenge Cup offered for nine varieties of Cactus Dahlias in this exhibit. The variety J. B. Riding was awarded the Silver Medal offered for the best bunch of Cactus Dahlias in the amateurs' classes.

Other prominent winners in the amateurs' classes were: Miss C. A. GLADSTONE, Swanmore, Bishop's Waltham, Hants; and Messrs. J. BRYANT, Salisbury; G. BOOTHROYDE; T. JONES, Ruabon, Wales; and H. BROWN, Luton, Beds.

FIRST-CLASS CERTIFICATES.

Dahlia C. E. Wilkins (Cactus).—A large, finely-shaped flower, with a pale yellow centre, shading to salmon-pink in the florets, which are narrow and recurving.

D. Ivernina (Cactus).—A big flower of fawny-bronze shade.

D. Rev. Arthur Bridge (Cactus).—A variety with pink florets and a yellowish centre; the shade of pink is deeper than in *C. E. Wilkins*, which is much the better flower.

These three varieties were shown by Messrs. J. STREDWICK & SON.

D. Flame (Cactus).—A variety of orange-scarlet colour, a shade lighter than in the well-known *H. Shoemith*. Shown by Mr. H. SHOE-SMITH.

D. Crimson Prince (Single).—A flower of good form of the colour indicated by its name. Shown by Messrs. WEBB & THOMPSON.

D. Mauve Queen (Cactus).—See p. 190 ante.

D. Peggy (Single).—See p. 190 ante.

D. The Bride (Decorative Cactus).—A white, diminutive flower of the *Cactus* type.

These last three were shown by Messrs. J. CHEAL & SONS.

NON-COMPETITIVE EXHIBITS.

MESSRS. JOHN LAING & SONS, Forest Hill, London; T. S. WARE, LTD., Feltham (Silver-Gilt Medal); HOBBIES, LTD., Dereham, Norfolk (Silver-Gilt Medal); J. T. WEST, Tower Hill, Brentwood (Silver Medal); JOHN PEED & SON, West Norwood (Silver Medal); H. CANNELL & SONS, Swanley (Crystal Palace Silver Medal); J. E. KNIGHT, Wolverhampton (Crystal Palace Silver Medal); and J. F. GROVES, Cedar Nursery, Ham, contributed non-competitive exhibits which in most cases consisted chiefly of *Dahlia* flowers.

ROYAL CALEDONIAN HORTICULTURAL.

SEPT. 11 & 12.—The annual exhibition of this society was held on these dates in the Waverley Market, Edinburgh. The weather was fine, and the society is to be congratulated upon the success of the show from every point of view. The number of entries totalled 1,820, which is 120 in excess of those received in 1906.

Cut flowers, and especially Sweet Peas and Roses, formed the chief of the exhibits, but Grapes were also largely shown. Hardy fruits were less fine than in former years. The miscellaneous exhibits were numerous, and generally of high quality.

FRUIT CLASSES.

An important class was that for a table measuring 10 feet by 4 feet 6 inches, arranged with dessert fruits and decorated with plants and flowers. The schedule stipulated that not more than 16 dishes of fruit should be included, and the fruits and decorations were to be judged separately. Only two exhibits were staged, that shown by Mr. GOODACRE, Elvaston Gardens, Derby, being awarded the 1st prize for fruit, and the same exhibit had also the best floral arrangement. Mr. GOODACRE showed Grapes of fair quality, fine Peaches, Plums, Nectarines, &c. 2nd, Mr. Kidd (gr. to Lord ELPHINSTON, Carbery, Musselburgh).

A 1st prize consisting of a Silver Bowl valued at £25, and given by Mr. Newton, was offered in a class for 12 dishes of fruits. This trophy was also gained by Mr. GOODACRE, for a grand lot of fruit, including Black Hamburg and Muscat of Alexandria Grapes, Belgrade and Barrington Peaches, Victoria and Pineapple Nectarines, Emperor Alexander and Peasgood Nonsuch Apples, a Melon, Figs, and Royal Sovereign Strawberries. Mr. Gibson (gr. to the Duke of PORTLAND, Welbeck Abbey) was awarded the 2nd prize for good, but distinctly less fine, produce than that shown in the 1st prize collection. 3rd, Mr. Young (gr. to Sir GEO. BULLOUGH, Kinloch Castle, Rhum).

For a collection of 12 dishes of orchard-grown fruit, Mr. GIBSON was placed 1st with fairly good examples. 2nd, Mr. MacKinlay (gr. to WHITELAW REID, Esq., Wrest Park, Bedfordshire).

GRAPES.—A cup of the value of 50 guineas was offered for eight bunches of Grapes. The

conditions of the schedule require it to be won three times before it becomes the property of an exhibitor. In addition to the cup £15 and a gold badge are given to the successful exhibitor. This class evoked a strong competition, no fewer than eight displays being staged. Mr. Lunt (gr. to Captain STIRLING, Keir) secured the 1st prize with a fine exhibit, but the light in the building was so bad that their full value could scarcely be determined. The points gained were:—

Madresfield Court (2)	7½ and 8
Alnwick Seedling (2)	7 and 5
Muscat of Alexandria (2) ...	8 and 9½
Black Hamburg (2)	7½ and 7

30 and 29½

Total 59½

The possible number of points obtainable was 72.

2nd, Mr. Green (gr. to Lady PALMER, Grinkle Park, Yorks.), with finely-finished bunches consisting of Alicante, Muscat of Alexandria, Gros Maroc, Madresfield Court, and Alnwick Seedling. This exhibitor secured 57 points. 3rd, Mr. BEISANT, Castle Huntly Gardens, with 55½ points. 4th, Mr. GOODACRE, with 55 points.

Mr. KIDD secured the 1st prize for four bunches of Grapes with good examples of Madresfield Court, Mrs. Pince, Black Hamburg, and Muscat of Alexandria. 2nd, Mr. Buchanan (gr. to the Earl of MAR AND KELLIE, Alloa Park). Eight displays were seen in this class.

In the class for the variety Muscat of Alexandria the berries generally had a greenish hue. Mr. Galloway (gr. to the Earl of WEMYSS, Gosford) showed the best-finished fruits, and thus secured the 1st prize in the class for two bunches and in that for one bunch. Mr. Pirie (gr. to C. COWAN, Esq., Dalhousie Castle) was placed 2nd in the class for two bunches of these Grapes with better clusters and large berries, but of inferior finish. Mr. BUCHANAN, Alloa, was 2nd for one bunch of Muscat of Alexandria Grapes.

Mr. GOODACRE had the finest two bunches of Black Hamburg Grapes in beautifully-finished fruits. 2nd, Mr. Mathison (gr. to Lady KINROSS, North Berwick). There was a large competition in the class for Black Hamburgs. The best single bunch of Black Hamburg Grapes was shown by Mr. T. Lunt (gr. to Captain STIRLING, Keir) with a large and good cluster. 2nd Mr. TINNIE SHANDON. For Alicante Grapes, Mr. HIGHGATE, Yester, was 1st; and for one bunch of Alnwick Seedling, Mr. Gordon (gr. to Sir H. E. MAXWELL, Whauphill) was successful with a large and finely-developed bunch.

The best bunches of Gros Colmar were shown by Mr. Porter (gr. to W. P. MOORE, Esq., Whitehall). Mr. HIGHGATE won the 1st prize for Lady Downes with large, well-finished bunches, and the same exhibitor was also 1st for Madresfield Court. Mr. MATHISON had the premier bunch in the class for Buckland Sweetwater, whilst the best examples of Appley Towers were shown by Major THORBURN, Peebles. The berries of this last variety had fine finish and bloom.

PLUMS, &c.—There was a great display in the classes for Plums in single dishes. The best collection of four sorts of dessert Plums was shown by Mr. Searle (gr. to the Marquis of NORTHAMPTON, Castle Ashby); 2nd, Mr. MAC-KINLAY, Wrest Park. The last-named exhibitor had the best collection of kitchen Plums in four sorts; 2nd, Mr. GIBSON, Welbeck Abbey Gardens.

Mr. GOODACRE was 1st for Peaches, and Mr. DAY, Galloway House Gardens, for Nectarines.

There were also good displays of Melons, Figs, and Apricots.

APPLES.—In the open class for a collection of 12 varieties of Apples, Mr. Smith (gr. to Earl DE GRAY, Coombe Court, Kingston) won the 1st prize with clean but rather green specimens. The best Apples grown in Scotland were shown by Mr. SINCLAIR, Congalton Gardens. Many exhibits were seen in the classes for single dishes of Apples.

PEARS, as in the case of Apples, were somewhat green and lacking in finish. The 1st prize for a collection of 12 varieties of these fruits was secured by Mr. MCKINLAY, Wrest Park Gar-

dens, and Mr. DAY was 1st for a collection grown in Scotland.

GROUPS OF PLANTS AND CUT FLOWERS.

A class was provided for a group of plants to be arranged on the floor of the building. Mr. Davis (gr. to Colonel STEWART RICHARDSON STANLEY, Perth) won the 1st prize with an exhibit that was superior to those usually seen at this exhibition. *Humea elegans* was largely employed in its arrangement, also *Codiaeums* and other similar foliage plants. 2nd, Mr. Geo. Wood (gr. to J. BUCHANAN, Esq., Oswald House). There were also many exhibits of stove and greenhouse plants, most of which were of less importance than those that were seen at these shows some few years ago.

CUT FLOWERS, as already noted, were freely shown, and the exhibits generally were of much beauty. In the open classes for cut flowers, the best-arranged table of Roses was shown by Messrs. W. & R. FERGUSON, Dunfermline, for an effective arrangement, the blooms being fresh and well coloured; 2nd, Messrs. COCKER & SONS, Aberdeen. In the class for 36 Roses, Mr. DICKSON, Belfast, was first with beautiful blooms.

The best 18 Hybrid Tea Roses were displayed by Messrs. CROLL, Dundee, and the same firm won the premier honour in the class for 18 Tea Roses.

Gladiolus, Dahlias, and Carnations were also well represented in good numbers in their respective classes.

A class for a decorated dinner table measuring 10 feet by 5 feet brought no fewer than 10 competitors. By far the finest arrangement was that of THE LEAMINGTON NURSERYMEN & FLORISTS, LTD., Leamington Spa. It was composed of blooms of a yellow *Oncidium* and mauve *Cattleyas*, with *Croton* leaves and sprays of *Selaginella* and *Asparagus*; 2nd, Messrs. HARKNESS & Co., Hitchin, with a rather heavy arrangement of Mme. A. Chatenay Rose; 3rd, Mr. Bell (gr. to Earl of HOME, Bothwell Castle). By some persons the 3rd prize exhibit was considered superior to the 2nd. Other floral designs, including bouquets and baskets of flowers, were largely shown.

VEGETABLES.

The best collection of 18 dishes of vegetables was shown by Mr. GIBSON, who exhibited produce in his usual first-class style, all the dishes being of high merit. Mr. HARPER, Quilliebolton, Perth, was awarded 2nd prize, and Mr. HILL, Kelso, the 3rd prize.

In the class for a collection of 12 dishes of vegetables grown in Scotland, Mr. BELL, Bothwell Castle, was 1st with a commendable display of well-grown produce.

HONORARY EXHIBITS.

A few groups of plants arranged on the floor of the building added greatly to the attractions of the show. At the East end of the building, Messrs. METHVEN & SONS had a series of beds gay with *Lilium*, *Hydrangea paniculata*, *Caladiums*, finely-coloured *Codiaeums*, and other species with green foliage. *Pandanus Lindeniana*, a yellow-striped form, was conspicuous among other good things.

MESSRS. JAMES DICKSON & SONS had large groups of hardy shrubs, among which *Hydrangea paniculata* formed a pleasing contrast.

MESSRS. R. B. LAIRD & SONS had an extensive group with a central piece composed of tall cork draped with *Selaginella* and furnished with *Humeas* and *Orchids*. On the ground were numerous *Lilies*, standard *Hydrangeas* and other decorative plants.

Mr. JOHN DOWNIE'S contribution consisted of stove and greenhouse decorative plants arranged in beds with shelled pathways between.

MESSRS. CUNNINGHAM & FRASER had many of the better sorts of hardy plants in flower at this season nicely arranged amongst shrubs. They also set up a well-constructed rockery.

MESSRS. STORRIE & STORRIE, Glencarse, filled a length of staging equal to 120 feet with a superb collection of hardy fruit trees in pots. Apples were particularly fine, but Pears, Peaches, Nectarines, Figs, and Cherries were also worthy of notice. The firm also contributed 100 dishes of Gooseberries in as many varieties, and dishes of Currants and Raspberries. *Celosias*, *Begonias*, *Streptocarpus*, &c., were arranged between the pot-trees.

Messrs. DOBBIE & Co., Rothesay, staged a very fine collection of cut blooms comprising Roses, fancy Pansies in the best varieties, a collection of Cactus Dahlias, with Phloxes and many other seasonable flowers.

Mr. JOHN FORBES, Hawick, had a table gay with choice Pentstemons, Phloxes, many varieties of Carnations, Violas, and hardy border flowers.

Mr. HENRY ECKFORD, Wem, contributed a table of Sweet Peas.

From Messrs. COCKER & SONS, Aberdeen, was exhibited a very fine display of hardy flowers.

Mr. BOLTON, Carnforth, set up an excellent collection of Sweet Peas. Mrs. Henry Bell, Queen of Norway, Clara Curtis, Mr. H. Sykes, and Helen Lewis were conspicuous varieties.

Messrs. BLACKMORE & LANGDON, Bath, contributed beautiful double Begonias.

Messrs. WELLS & Co., Mersham, showed a collection of early-flowering Chrysanthemums.

Messrs. GUNN & Co., Olton, had a splendid display of the best Phloxes. Mr. McOMISH, Crieff, a variety of cut flowers; Mr. DARLINGTON, Warton, Sweet Peas; Messrs. LISTER & SON, Rothesay, florist's flowers; Mr. BROWN, Blantyre, also florist's flowers; Messrs. T. S. WARE, LTD., Feltham, a grand lot of blooms of Begonias and Carnations; Mr. ANGUS, Penicuik, showed Disas, &c.; the KIPPEN VINERY Co. exhibited well-cultivated Grapes; Messrs. SUTTON & SONS, Reading, displayed an exhibit of much interest, the principal features being varieties of Tomatos, Melons, and Runner Beans.

FIRST-CLASS CERTIFICATES

were awarded to:—

Apple "Roseberry," from Messrs. STORRIE & STORRIE, Glencarse. It is a larger and finer fruit than that of Mr. Gladstone, and ripens at the same period.

Chrysanthemum maximum "Snowdon," from Mr. ANGUS, Penicuik. An extra large-flowered variety.

An AWARD OF MERIT was awarded to:—

Sweet Pea "Mrs. Henry Bell," from Mr. BOLTON, Carnforth.

DEBATING SOCIETIES.

CROYDON & DISTRICT HORTICULTURAL.—This society commenced its winter session on Tuesday, September 3, when Mr. R. Cleveland, Croydon, read a paper on "Budding and Grafting." A discussion followed the reading of the paper.

CARDIFF GARDENERS.—The eleventh annual outing of this association took place on Thursday, September 5, when members and friends, to the number of 50, visited the gardens at Wilton House and Longford Castle, in the neighbourhood of Salisbury. Wilton House gardens were first visited, the party being conducted around the pleasure grounds and through the glass-houses by Mr. T. Challis. After partaking of luncheon, Longford Castle was visited, Mr. Tucker acting as guide.

GARDENERS' CRICKET.—An enjoyable afternoon was spent on Saturday, September 7, on the South Lynn Cricket Ground, Putney, by the kind permission of Sir WILLIAM LANCASTER, when a match was played between an eleven chosen from Messrs. JAMES VEITCH & SONS' employees, of Chelsea, and the Putney and Roehampton Gardeners, captained by Mr. GODDARD. The result was a victory for the visitors, who defeated the Putney team in one innings, chiefly owing to the good play of Mr. OLDHAM and the excellent batting of Messrs. MOWLEM and WHALLEY.

ANSWERS TO CORRESPONDENTS.

* * * The Editor will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for forming Supplementary Illustrations to this Journal.

ANTS INFESTING A LAWN: F. S. Boiling water poured down their burrows will destroy many of these creatures, or a little bisulphide of carbon or vaporite may be used, the fumes of which will at once cause death to the ants. A poisonous but very effective remedy known as the Ballikrain Ant Destroyer is prepared by Messrs. Alex. Cross & Son, Glasgow. It should be labelled "Poison," and be used with great care.

APPLE SHOOTS DYING: S. M. S. The trees are badly affected with canker, *Nectria ditissima*. Young branches that are diseased should be cut off and burned. Wounds on older shoots should have as much of the injured portion cut away as is possible and be smeared with clay or a coating of gas-tar. Treat the injured shoots with a solution of iron sulphate, using 1lb. to each gallon of water.

BEECH TREES DYING: W. B. J. The bark you send is badly infested with the Beech coccus—*Cryptococcus fagi*, an insect pest allied to mealy-bug. The coccus is found chiefly upon the main trunk of the tree, which should be well scrubbed with paraffin emulsion prepared by mixing equal proportions of soft soap dissolved in boiling water, and paraffin. When required for use add 20 times its bulk of water. In winter the bark should be scrubbed with the caustic alkali wash.

BEGONIA: F. J. T. It is not the first time we have received Begonias similarly affected during the past few weeks. There is no fungus disease, and we fail to find any trace of bacteria. Certainly there were three or four thrips on the portions you sent. The causes of the disfigurement are probably external to the plants themselves, and due to the want of a proper balance in the moisture present in the atmosphere; or to permitting drip to fall upon the plants from the roof of the house.

CATERPILLARS ON RED CURRANT BUSHES: H. W. The caterpillars on the Red Currant leaf you send are very young specimens of the grub of the "Gooseberry and Currant sawfly" (*Nematus ribesi*), a common and destructive pest to the foliage of Gooseberry and Currant bushes. It is probably this insect which has been destructive in your neighbour's garden, but we have never heard of it attacking Pelargoniums. This pest can be exterminated quite easily by skimming off the surface soil to the depth of 3 inches under the bushes in winter, and burning or burying it deeply. This will destroy the insect in the chrysalid state, but you will still be liable to infection from adjacent gardens unless the same method of combating them is adopted by your neighbours.

CHRYSANTHEMUMS AFFECTED: F. H. There is no fungus disease present on the shoots; the trouble is due to some local circumstance, or error in culture.

EXHIBITING HARDY FLOWERS: W. H. M. B. *Alstromerias* do not form bulbs, but it is not usual to include plants of the natural orders *Amaryllidaceae* or *Liliaceae* in a collection of flowers from which bulbous subjects are excluded, it being difficult for exhibitors in all cases to determine strictly which plants have bulbs and which tubers, or even fleshy roots.

GRAPES: Miss P. The berries are suffering from a condition known as "shanking." It will be necessary to examine the roots of the vines during the autumn, and if the drainage of the borders is found to be imperfect, this state of things must be remedied. When you have done this it will be desirable in the future to encourage the roots to multiply near to the surface of the border, which may be done by applying frequent rich top-dressings.

GRASSES FOR A SITUATION NEAR THE SEA-SHORE: W. G. G. The following grasses will thrive in a maritime position:—*Ammophila arundinacea*, *Elymus arenarius*, *Phleum arenarium*, *Lagurus ovatus*, *Polypogon littoralis*, *Psamma arenaria*, *Cynodon Dactylon*, *Spartina stricta*, *Lepturus incurvatus*, *Hordeum maritimum*, *Festuca elatior* var. *arundinacea*, *Festuca uniglumis*, *Poa maritima*, *P. distans*, and *P. loliacea*. You may not be able to obtain all these varieties from the nurserymen, but you should secure seeds of as many as possible, and when sown those species that find the conditions favourable to their growth will perpetuate themselves. The list is not of value if the grass is intended for feeding purposes.

ONIONS ROTTING: F. M. H. You do not afford sufficient information as to when the decay first appeared. If it was caused by the Onion maggot, as you suggest, the land should be dressed with gas-lime after the bulbs are harvested, and any diseased Onions should be burned. Do not sow Onion seeds again on the same soil for some time to come.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time; they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. Correspondents not answered in one issue are requested to be so good as to consult the following numbers.

FRUITS: E. H. Plums: 1, probably Monarch; 2, Diamond; 3, Prince of Wales; 4, Mirabelle Petite; 5, Mirabelle de Nancy.—A. G. R. Plums: 1, White Magnum Bonum; 2, Transparent Gage; 3, Jodoigne Green Gage; 4, Denbigh; 5, Blue Prolific.—Garden Boy. Plum: Emerald Drop.—G. H. E. Grapes: Foster's White Seedling and Black Hamburgh.—T. V. You have not observed the rules as to sending samples of the foliage with the Nectarines. The fruits were over-ripe when packed.

PLANTS: W. F. *Cotoneaster frigidula*.—J. M. P. *Senecio clivorum*.—F. M. 1, *Zygopetalum Burkei*; 2, *Aganisia lepida*; 3, *Brassavola nodosa*; 4, *Pleurothallis scaria*; 5, *Restrepia trichoglossa*; 6, *Masdevallia O'Brieniana*.—A. S. *Polygonum Brunonis*.—G. A. *Lamium purpureum*, variegated variety sometimes cultivated in gardens.—P. W. B. *Amaryllis Belladonna*; the cultural requirements of this plant will be found in most works on gardening.—A. A., *Ringwood*. *Tilia heterophylla*.—J. B. *Datura chlorantha flore pleno*.—J. B. *Hippophae rhamnoides* (Sea Buckthorn).

PLANTING OF A MARECHAL NIEL ROSE: Niel. A north border is not a good position for this Rose, but if the soil is of a suitable nature, and providing that sunshine will reach the position at 12 o'clock noon, fairly good results may be secured. You will do well to shake the mould from the roots and spread the roots out well and evenly. Do not cut back the growths until next springtime. Afford the plant some slight protection during severe weather in winter. The practice of cutting the plant down to a point one foot above the ground after flowering, especially when the available space is of limited extent, is a good one, but it must be done every year to secure the best results. When growth is not satisfactory remove the surface soil down to the roots, replacing this with good loam and some rough sand mixed well together. At the commencement of the summer afford the plant a good mulching with short manure, and apply liquid manure or small quantities of chemical manures to the roots during the growing season if extra stimulants appears to be necessary.

POPLAR LEAVES SPOTTED: S. B. & S. Your leaves of Lombardy Poplar are spotted by anthracnose, *Glæosporium populi*. It is difficult to suggest a remedy; spraying is expensive if not impossible in respect to such tall growing trees. As a preventive all fallen leaves should be gathered together and burnt.

RAT POISON: G. H. T. Steiner's "Vermin Paste" may be used to destroy these pests. A preparation known as the Liverpool Rat Virus will quickly reduce the numbers of rats and mice. The specific contains a bacterium which spreads a fatal disease amongst these creatures, but which has no effect upon human beings or domestic animals.

TOMATOS DISCOLOURED: M. A. P. The hard patches are due to the absence of one of the necessary plant foods in the soil in which the plants are growing. Afford a dressing of some manure that is rich in potash.

COMMUNICATIONS RECEIVED.—Lay—G. A.—B. S. S.—C. T.—A. W. T.—W. J.—H. C. & Sons—R. N.—Anxious Enquirer—S. B.—G. H. C.—A. J. B.—H. H. C.—F. B.—A. T.—B. C.—A. P.—J. D. G.—J. E.—C. T.—T. M.—J. H.—W. W.—A. E. T.—W. E. A.—H. W.—J. C.—T. F.—J. F. H. G.—J. D. J.—H. C. P.—H. C.—L. B. & Co.—Yokohama—J. S., Darley Dale, many thanks.—C. E. M.—F. B.—W. B.—H. T. G.—W. E. G.

THE

Gardeners' Chronicle

No. 1,082.—SATURDAY, September 21, 1907.

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THE LILY SEASON.

PLANTS of almost every kind have been adversely affected by the climatic conditions of the past spring and summer, but the magnificent Lilies that have come to us from the East and from the West; from California, Siberia, Persia, India, China, and Japan have survived the ordeal well, many of them having manifestly profited by the superabundance of rain. But while they are exceedingly fond of moisture, they can, like other forms of vegetation, even during their season of growth and development, receive too much. One of my grandest Lilies, for example, viz., *Lilium monadelphum*, var. *Szovitzianum*, which had attained to a height of nearly 9 feet, had its flower-buds utterly ruined when they were preparing to open, by the excessive drip from the branches of the trees under which it was planted. Other specimens of this great Lily, on borders less exposed to such an almost incessant shower-bath, were more fortunate, and came into bloom with their exquisite lemon-coloured flowers perfectly unimpaired. Nevertheless, the loss of the Goliath among Lilies to which I have alluded was greatly to be deplored. Its only rivals in stately growth and floral impressiveness are *Lilium giganteum*, the great Indian Lily; *Lilium Henryi*, a native of China, quite

invaluable for garden cultivation, and *Lilium auratum*, var. *platyphyllum*.

There are, unfortunately, for the earnest cultivator, many graceful Lilies which are not enduring in ordinary soils; they flower for a season, and then the place that once knew them, however imperfectly, knows them no more. Among these I would mention *Lilium rubellum*, a miniature, pink-coloured species, a native of Japan, whose microscopic bulbs very rapidly degenerate, unless they have been planted in a well-drained, fibrous soil; and *Lilium Washingtonianum*, which may be assigned seemingly suitable situations, and yet—as, unfortunately, I know from experience—not succeed. There are few Lilies more charming or fragrant than this truly exquisite Californian gem, yet it is always exceedingly transitory; and though it may flower for one or two seasons and delight us with its colour and delicate beauty, it is seldom long-lived. Another very beautiful Lily of widely different nationality, aspect, and characteristics, viz., *Lilium Krameri*, is also equally unreliable, and seldom flowers here for more than two seasons, though under other climatic conditions elsewhere it may possibly be found more lasting.

There are also Lilies of the greatest beauty and refinement which, while they are among the chief ornaments of the conservatory, are by no means adapted for garden culture. Prominent among these are *Lilium neilgherrense*, *L. Wallichianum*, and *L. nepalense*, an Indian extraction, and therefore exacting. But of this I am assured, that some of the grandest Lilies, whether of stately growth or beauty of flower, can be grown in the open air, wherever shelter and congenial soil are afforded them, with perfect success. Of these the most notable for their entire reliability are *Lilium auratum*, *L. giganteum*, and *L. monadelphum*, of which the last mentioned, a native of Mount Caucasus and Northern Persia, has already been described. In many places highly favourable for its culture, *Lilium auratum* cannot be planted without adequate protection from rabbits, which destroy the inflorescences as they begin to appear. I had no fewer than a dozen spikes of the pure white flowers of *L. speciosum* destroyed in my garden this season by those ravenous intruders. One of the doors leading to my "Paradisus terrestris" had been left open one fine evening by visitors during my involuntary absence, with such deplorable results. But, as Lord Beaconsfield once remarked, "It is the unexpected that happens," and in any case I have this consolation, that, though the flowering stems have been destroyed, the bulbs which created them, with all their manifold hidden potentialities, have not been injured.

There is no Lily dearer to me than *Lilium speciosum*, in all its refined and fascinating forms; in beauty of aspect and in delicacy of fragrance it is unquestionably supreme, and therefore I regret more than language can express the destruction of *Lilium speciosum* Krætzleri, and *L. s. album novum* in my garden this year. In October these were my benignant lights amid the prevailing gloom.

Meanwhile such inspiring possessions as *Lilium auratum*, *L. chalcedonicum*, the luminous "Scarlet Martagon," *L. longi-*

florum Wilsoni, and *L. Henryi* are flowering with characteristic luxuriance, and have not been destined, like the ill-fated flowers depicted in Gray's "Elegy," to waste their sweetness in the desert air. David R. Williamson.

FOREIGN CORRESPONDENCE.

SOME RARE ALPINE PLANTS AND THEIR CULTIVATION.

DAPHNE PETRÆA (SYN. *D. RUPESTRIS*).—*Daphne petræa*, Leyb., is a very rare Alpine plant, but its worth being great it is deserving a place in the rock-garden or in a collection of plants. The species was first described by Leybold in 1853 in the *Regensburg Bot. Gesellschaft*, and it is said to be found only in South Tyrol and in some of the extreme south-western parts of the dolomites in the Trentino. There it grows, as I recently saw it, amongst the rocks, in very sunny, exposed, and always perpendicular positions; indeed, I did not meet with a single plant growing flat upon the soil. The mountains whereon it grows are quite dry. There are no snow fields or glaciers upon the whole mountain system, which points to the plant being a xerophyte. It should not, however, be planted in too dry a position, for the rocks whereon it is found are always, and the dolomites particularly, as wet as a sponge, and the water in their numerous pores is appropriated by the roots. What the plant seems to dislike is stagnant humidity. It grows well here exposed to the sun and planted in well-drained soil in the fissures of a rockery, where it is watered daily. In this situation, however, it does not flower so freely as in the dolomites. The pink flowers are produced in clusters, and they cover the very dwarf and deep green leaves. The foliage is thick, narrow, and evergreen. The plant is easy of cultivation, and can be increased by seeds, cuttings, or by grafting. I hope to procure a supply of seeds in the autumn, as my guide has promised to pluck them in the right season. As a pot plant it is easily grown. *Daphne petræa* often grows in company with *D. striata* in the crevices of rocks. They are neighbours, but both species grow in a distinct situation.

JUNIPERUS CEDRUS.—Dr. Perez, Puerto Orotava, Teneriffe, sent me two years ago some ripe seeds of the rare Conifer *Juniperus cedrus* that is found growing only on the highest mountains of the Canary Islands at 6,000 feet elevation. Mr. Perez wrote me several letters about this very distinct tree, which has been so much purchased on account of its aromatic timber that it is almost extinct in its native habitat. He added: "It is very difficult to raise plants from seeds or from cuttings, and several attempts made by myself and other people have been without success." After soaking them in a weak solution of acetic acid (1 in 400 parts of water), seeds sent by Dr. Perez all germinated well in Geneva, and we have now a good lot of seedlings. They will also germinate readily if treated with saltpetre or in a 2 per cent. solution of phosphoric acid. Not one of the seeds failed to grow when treated in this manner.

CAMPANULA RAINIERI.—This plant grows between the rocks of the Bergamese Alps, in the "pierriers" and stony places of the Alpine regions (from 5,000 to 8,000 feet elevation). The true form is seldom seen in gardens. The roots and stolons cover a very large area, and carpet the soil with thousands of large, sessile flowers, that are bigger and larger than those of *Campanula carpathica*, and reflect the blue sky of Northern Italy with shades of light lilac. The cup-like flowers are filled with dew, which

my guide and I were happy to drink, as we failed to find water in the dry mountains of Bergamo. How bright the flower presents itself to the traveller in the bare rocks which it adorns on every side and in every little crevice! In English gardens this species should be planted in a limestone wall, facing south or south-east, and be kept rather dry at its roots. When growing between the stones of the "pierriers" the flower is larger than when springing from the rocks, because the soil is richer in organic food. Seedlings of this rare plant are easily raised in the spring; the very numerous seeds are produced in big capsules. Cuttings form roots quickly, and the plants can be cultivated in pots as readily as *Campanula fragilis*.

CAMPANULA ELATINOIDES AND C. ELATINES.—These two Campanulas are Italian species. The first-named grows in the fissures of the dolomitic rocks of the Bergamese Alps (Lombardy). It is a downy species, with silvery-grey foliage; the stem is simple and sinuate. The flowers are small in size and of a very dark shade of blue. They are numerous produced, and form spikes ranging from 2 or 3 inches to 1 foot or more in length. The season of flowering is from August to the end of November. The plant succeeds in a sunny wall, for it cannot endure damp. In the "Valle di Scalve" and in the neighbourhood of Clusone it covers every wall or rock, growing between the stones even in the hardest walls. Not very different is its "congénère," *C. Elatines*, which grows in the valleys of West Italy, Cottian Alps, and Canavese, from Ivrea to the Monte Viso, always in walls or in rocks similar to *C. elatinoïdes*. It differs from that species by its branched stem, its violet-blue flowers, and its less downy foliage; the lower leaves are rounder, and the whole plant is more ternate and graceful. The stems are brittle, and a milky juice exudes when they are broken. The period of flowering is from August to October. It is easy of culture if grown in a wall or in the crevice of a rock in a moderately sunny position. It can be well grown in a pot, provided ample drainage is afforded. Slugs are very fond of this species. *Henry Correvon, Geneva.*

NEW OR NOTEWORTHY PLANTS.

DENDROBIUM ACUMINATUM, ROLFE.*

The plant illustrated at fig. 88 was found bedded in moss and growing on hardwood in Bataan Province, 30 miles west of Manila, and at an elevation of 2,300 feet. The specimen had to be conveyed from its natural habitat over an exceedingly rough trail that was much overgrown with "Wait-a-bit" (*Dæmonorops*) and *Calamus* species, the tips of which are armed with a knife-edged, retrorse barb, which pierces through khaki, flesh, or flower stems with equal impartiality. The utmost care was used, but, nevertheless, no fewer than 17 flowers were broken off in transit. While in habit and foliage this plant closely resembles *D. cymbidioides*, Lind., its whole inflorescence is more than double the size of that species. The flowers, which measure two or more inches across, are a deep peach-pink, shading darker towards the base of the perianth, and the labellum passes to a rich, velvety, wine-red. When the sun is shining the flowers disseminate the delicious and unique fragrance of noyau, but in cloudy or overcast weather they appear to be quite scentless.

There is a Government Station at the same altitude and within a mile of the place where I found *Dendrobium acuminatum*, and where meteorological observations have been recorded during six years.

The mean annual precipitation is 185 m.m.

greater, and the mean temperature nearly 6° Fahr. lower than in Manila. This species should thrive excellently in the warmest part of a Cattleya house. The glossy, seemingly-varnished pseudo-bulbs are not the least beautiful portions of the plant, and they are so tough and coriaceous that they should endure well during a long transit. The plant had 106 healthy pseudo-bulbs, which is the more remarkable, as no other specimen found had more than 15 of these growths. *Wm. S. Lyon, Horticulturist, Bureau of Agriculture, Manila.* [Mr. R. A. Rolfe informs us that the species was originally described from specimens collected at the Lamao River, Mt. Mariveles, in the same province, by H. N. Whitford. It belongs to the very distinct section *Sarcopodium*.—ED.]

BULBOPHYLLUM LONGISEPALUM.

The illustration at fig. 89 represents this extraordinary species, for which Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White), was

which has a slightly hairy surface, is delicately poised, so that its position changes with every movement of the flower—an arrangement common in this singular genus of Orchids.

THE HAY CROP AT ROTHAMSTED.

THE meteorological returns at Rothamsted, Herts., for the first six months of the present year show a total rainfall of nearly 12 inches, which is about half-an-inch below the average of the past 54 years at this station. The records for the months of April, May, and June, when vegetation is most actively growing, showed more than an average amount of rain. The mean temperature of the air was slightly in excess during the months of January, March, and April, but below the average in February, May, and June. Bright sunshine recorded during the six months amounted to 996½ hours,



[Photograph by W. S. Lyon, Manila.]

FIG. 88.—DENDROBIUM ACUMINATUM, FLOWERING IN THE PHILIPPINES: FLOWERS, PINK WITH VINOUS-RED COLOURED LABELLUMS.

given a Botanical Certificate at the Royal Horticultural Society's meeting on August 20. The plant exhibited bore 14 flowers, and secured for the grower a well-merited "Cultural Commendation," for it is the original plant figured in *Lindenia* III., t. cviii., as *B. grandiflorum*. The plant has, therefore, been in the Burford collection for many years. The true *Bulbophyllum grandiflorum* was illustrated in the *Gardeners' Chronicle*, April 6, 1895, p. 429, also from a plant which flowered in Sir Trevor Lawrence's collection, and which is very distinct from *B. longisepalum*. Both are natives of New Guinea and need to be cultivated in a hothouse.

Bulbophyllum longisepalum has a whitish ground to the flowers, but the greater part of the surface of the elongated sepals is spotted and veined with claret colour. The petals are small, the column very short, and the labellum,

which is a deficiency compared with the average record in this district of 35½ hours.

Under these climatic conditions, the Hay crop was generally over the average in bulk, but the unfavourable weather at the time of cutting and harvesting rendered the work both tedious and expensive. In fact, but little really well-cured Hay will be obtained from this year's crop.

The Rothamsted experiments on the mixed herbage of permanent Grass-land have now been continued for more than a period of 52 years. Some of the plots have been without manure for the whole of this time, and others have been furnished with different artificial manures, each kind of manure only being applied year after year to the same portion of land. The crop of the present season was cut on July 13 and 15, and was harvested in very fair condition on July 17 and 18.

* In *Ames Orchid*, v., p. 86.

The plot which has received not an ounce of manure of any kind for the whole period of 52 years has this year produced 19½ cwt. of Hay per acre, which is 1½ cwt. less than the average quantity. The herbage on this portion is of a very mixed character, more than 50 species of Grasses, Clovers, and weeds being present. The plot which received a dressing of superphosphate alone produced 25 cwt. of Hay per acre, being 2½ cwt. above the average yield. Thus the quantity of stemmy Hay, encouraged by phosphate alone, is but little greater than that from the unmanured plot. The Grasses and weeds are slightly increased, while the Clovers are diminished.

Superphosphate and sulphate of ammonia applied together yielded 38½ cwt. of Hay per acre, being 3½ cwt. in excess of the average. The effects produced by this combination of manures is an increased yield of Hay, composed chiefly of Grasses of the most inferior quality; Clovers have entirely disappeared.

Superphosphate and potash applied in combination, but without nitrogen, gave a produce of 54½ cwt. of Hay, being 19½ cwt. above the average yield. This large weight of Hay, obtained without any nitrogenous supply, is entirely due

amount. The Grass in this case ripened early. Nitrate of soda encourages the growth of Clovers in the mixed herbage much more than does ammonia salts.

The Rothamsted experiments on Grass-land show that not only is the weight of Hay considerably influenced according to the nature of the manure employed, but that the various plants of Grasses, Clovers and weeds differ greatly in number of individual plants, in character as to stem and foliage, and in their degree of development as to ripeness, and, consequently, in the feeding quality of the Hay that is secured. The elements of potash and phosphates assist in maintaining the quality of a pasture; these fertilisers are best supplied by an application of 5 cwt. basic slag and 5 cwt. kanit per acre every other year. Nitrogen in any form should be used sparingly on pasture, about 8 or 10 tons of farmyard dung per acre applied once in each five years being generally sufficient. The area of several of the plots has this year been divided, and on one-half, in addition to the usual manures, 1,000 lb. of ground burnt lime have been applied. This has resulted in a large yield of Hay of improved feeding quality. J. J. Wills, Harpenden.

the southern half of England; indeed, it will be found that the plants will flower at their appointed time in dry storage. Choice of soil is not of great importance; they can all be grown quite easily in a light loam, and if the land is heavy, the addition of some sand will be all that is necessary. Comparatively shallow planting is advisable. All the species in this climate enjoy the open sunshine, but they will flourish fairly well in the light shade of thin deciduous trees and shrubs, provided there is no heavy dripping of water from the branches. Most Crocuses in a wild state grow hidden among scrubby plants such as Thorns, and this fact has caused many persons to plant them beneath shrubs by preference. Some measure of protection is by this system afforded flowers that blossom late in the winter, but those varieties which have a genial flowering period do not need it. The wildings are found in scrub because they would be otherwise destroyed by goats and other animals. Practically all the species produce seeds freely. No harvesting is necessary in the case of common species planted in the turf, for their seeds will germinate where they fall; but seeds of choice species in borders require to be sown in a warm, light soil directly the capsules burst.

The cultivation of autumn-flowering Crocuses calls for a few general remarks. Sand is helpful in the soil, but a few bushels of mortar rubble are much more so. This material, if passed through a half-inch screen and freely incorporated with the staple, renders the site distasteful to insect life. Rats and mice are particularly troublesome in broad grass plantings; fortunately, there is a capital remedy for this in "Ratin." I was much troubled by rats collecting from far and near to eat of Tulip, Fritillaria, and other bulbs recently planted, and tried this specific. The baits disappeared on the third day and the rats within a week, so efficacious was the remedy.

The planting of small numbers of autumn-flowering Crocuses may be done even when the corms are flowering, but any extensive plantings should be completed by the middle of September at the latest. A few dozen corms, potted and encouraged to grow quickly by affording them a little extra warmth, will prove very attractive in the decoration of apartments. One can return the corms to the open garden after flowering.

SPECIES AND VARIETIES.

C. ASTURICUS.—This is an early-flowering, compact-growing species, from Northern Spain. The flowers, which vary considerably in colour and merit, are produced in October. They have short tubes and short segments, which are coloured a violet-purple in the variety that is generally accepted as the type. Azureus, pale violet, and atropurpureus, deep purple, are two colour selections of merit. It is essentially a plant for the rock garden, and one sees it at its best when it forms a "torrent" of flowers down a steep declivity, with *Herniaria glabra* clothing the soil at its base. The leafage is produced after the flowers fade, and matures in the following May.

C. CASPIUS.—A white-flowered species from the Caspian region. The flowers are shaped as in *C. zonatus*, and have the same elongated cup-outline as those of that species. They are white throughout, save for the yellow at the base and tube. It is a desirable Crocus for the rock garden. The leaves are produced in October.

C. CANCELLATUS.—This is a pretty and variable species widely spread throughout Asia Minor. The flowers are produced late in September, and have boat-shaped petals 1½ inch in length, with orange basal colouring and a little feathering of mauve externally. This species seems capable of living in the poorest turf, and can be recommended for planting in light, sandy soils that dry quickly.

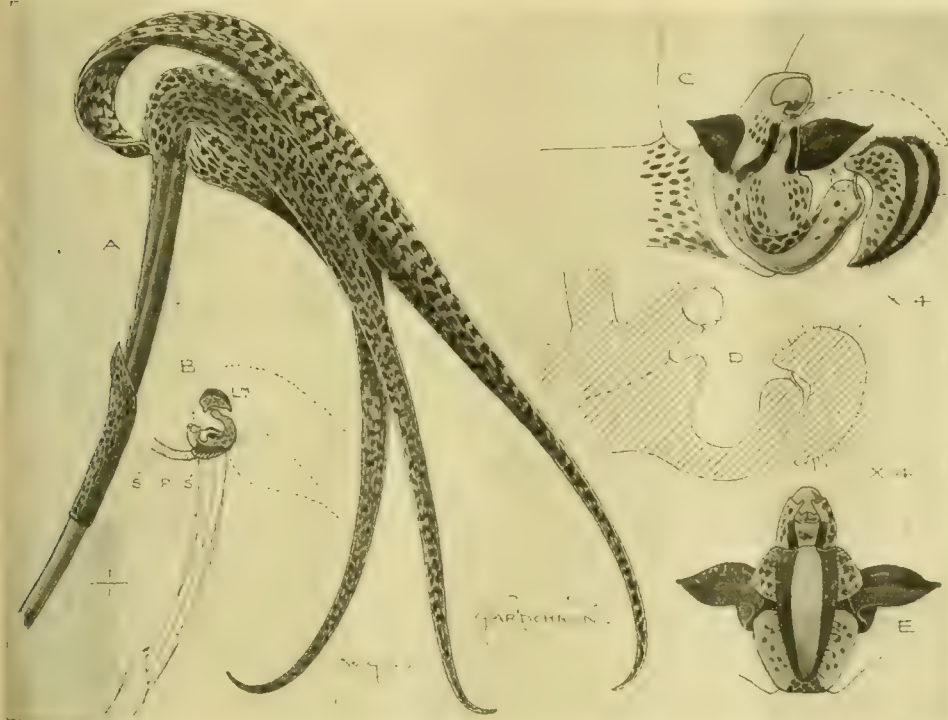


FIG. 89.—*BULBOPHYLLUM LONGISEPALUM*.

A, Side view of bloom, nat. size; B, Sepals removed to show the small column and hinged labellum, nat. size; C, Column, labellum and petals $\times 4$; D, Section through col. and labellum $\times 4$; E, Front view of labellum and petals $\times 4$.

(For text see p. 210.)

AUTUMN FLOWERING CROCUSES.

THERE are many species of autumn-flowering Crocus that can be recommended for planting in the rock garden, flower border, or grassy vista. In common with most of the large genera, there are a few species in the genus Crocus that are not worth cultivating in gardens, and it is these that are generally difficult to grow. Such species as will succeed almost anywhere, including cancellatus, speciosus, zonatus, and pulchellus, are now propagated in great numbers annually, and their corms are cheap enough to plant broadcast. The typical herbaceous border generally offers a few bare sites that will accommodate some of the strongest-looking Crocuses, and these species will extend the list of late flowering plants. The narrow belt of shrubs and tiny borderings often to be seen close to dwellings, offer sites for further plantings. September is the latest period of planting for

to the enormous development of Clovers, which constitute more than one-half of the whole herbage.

The Clovers, which are assisted in their growth by the potash and phosphate, obtain their necessary nitrogen from atmospheric sources, through the agency of micro-organisms present in the soil, the work of the bacteria being favoured by the potash and phosphate.

The plot receiving a manure mixture of potash, superphosphate, and sulphate of ammonia gave 63½ cwt. of Hay per acre, which is 12½ cwt. in excess of the average by this treatment. In all the plots to which sulphate of ammonia, potash, and phosphates in different combinations have been applied continuously, the produce of Hay is bulky, the percentage and weight of Grasses is large, while the proportion of Clovers and weeds is small.

The plot receiving a mixture of potash, superphosphate and nitrate of soda produced 53½ cwt. of Hay, being 7 cwt. in excess of an average

C. c. cilicicus is a pretty blue-flowered variety, and one that thrives on a dry slope of a rockery. The colour varies from lilac to rich blue, and the stigmas are a rich shade of orange. All the forms of *C. cancellatus* flower with the leaves just pushing through the sheaths.

C. HADRIATICUS.—A precocious species from the Ionian Islands. The flowers appear early in October, and the foliage develops some weeks before the inflorescences, which they just exceed in height. The floral segments are white, starry in outline when fully expanded, feathered outside with purple more or less slightly, and possessing a rich yellow, circular, basal disc. The species is essentially a rock-garden subject, but it also succeeds in a narrow, dry border. It dies out in grassland in the second year after planting.

C. IRIDIFLORUS.—This very distinct and

GREYWELL HILL.

GREYWELL Hill, the seat of the Countess of Dorchester, is situated 4 miles to the south of Winchfield Station, $1\frac{1}{4}$ miles from Hook, and 5 miles east of Basingstoke. The original parish church was built in the time of King John (1215), which will afford some knowledge of the antiquity of the place. The church of St. Mary is an ancient structure of flint, with stone quoins and dressings, and was built in the early English style. It was restored in 1870. Greywell Hill is situated on an eminence in a pretty small park, which contains many fine trees, including specimens of the Beech, Lime, Elm, and Whitethorn. The soil is light loam, with a sub-soil of chalk and clay. The flower borders shown in fig. 90 are situated in the centre of the kitchen garden, on the north side of the house, and are about 100 yards long. A grass path leads along the centre, with a

way that is covered with Rose *Félicité-Perpetuë* that presents a beautiful sight when in flower.

In the kitchen garden are many noteworthy fruit trees. From two trees of Apricot growing against a south wall 16 feet high, 600 fruits were recently gathered. In the kitchen garden some of the edgings of Box are fully 2 feet in height, and as much in width, with a cleanly cut surface.

The mansion is a commodious structure wholly clad with creepers; a China Rose rambles over the porch entrance. In tubs on either side of the entrance are two red Pomegranate trees fully 9 feet high, and smothered with their bright scarlet blossoms; these plants are said to be 90 years old. The tubs are comparatively small: they measure 2 feet 6 inches across and 15 inches in depth, thus proving in what little rooting space the Pomegranate will thrive.



[Photograph by F. Mason Good.]

FIG. 90.—SOME FLOWER BORDERS AT GREYWELL HILL, THE RESIDENCE OF COUNTESS DORCHESTER.

attractive species, from Eastern Europe, can be planted in almost any part of the flower garden. Its flowers possess a quality of refinement in their mauve colouring. The outer petals are twice the size of the inner ones, are a little deeper in colouring, and exceed $1\frac{1}{2}$ inch in length. The stigma is a tassel of purple filaments, and the flower tube is coloured an amethystine-blue. Newly imported bulbs are generally weak and need cultivating for a year before they are capable of flowering well, after which they develop large flowers 6 inches in height and with correspondingly large petals. *C. iridiflorus* forms a good garden species, and it enjoys a liberal admixture of lime rubble in the soil. *G. B. Mallett.*

(To be concluded.)

flower-border on either side. The borders are each 6 feet in width, and at the back are some remarkable examples of espalier-trained Apple and Pear trees. Some of these trees are said to be fully 200 years old. One Apple tree of the variety *Glory of the West* has spurs fully 3 feet in length. Amongst these trees is one of *Ribston Pippin* Apple, which this season is carrying a good crop of fruits. These trees are said to have been planted by Lady Dorchester's great grandmother. The flower-borders are planted with standard Roses, Dahlias, *Fuchsia gracilis*, and Pinks in quantity are planted next to the path. A fine specimen of *Deutzia scabra*, over 40 years planted, produces a wealth of blossom in its flowering season. The path at the east end is entered by an arch-

On the eastern side of the mansion is growing a handsome specimen, 20 feet high, of *Chimonanthus fragrans*. *Berberis vulgaris* was thickly studded with its brilliantly coloured fruits. On the lawn is a weeping, white-fruited Mulberry tree, whose branches spread over a space 20 feet in diameter.

A quaintly-built pergola is almost hidden from view under tall Beech and Lime trees. The structure is 8 feet in height, and as much in width. It was built of Larch poles some 14 years ago, and has growing over it the Ivy, Holly, and common Laurels.

A small Dutch garden is much hidden by large forest trees, from which through an opening a magnificent view of Odiham Church is obtained. *A Wanderer.*

A NEW CHRYSANTHEMUM DISEASE.

IN 1902 Dr. M. C. Cooke, in his articles on "Pests of the Flower Garden" (*Journal of the Royal Horticultural Society*, vol. xxvii., p. 373), wrote:—"It will be well to be guarded against the occurrence of 'leaf spot' on Chrysanthemums, as some three or four exotic species are

dium," as shown at *b*. At *c* three spores are shown more highly magnified. The size of the spores is $40-70 \times 1.5-2\mu$.

The disease was first observed about 1890 in Italy, in the Botanic Gardens at Pavia and elsewhere. Briosi and Cavara state:—"We have for several years in succession observed this parasite in the autumn just when the Chrysanthemum is about to flower. The leaves which are affected by it, besides bearing brown patches, become crumpled at the margins, and fall prematurely."

In the United States, Dr. Halsted writes of the disease as follows:—"A blight has been quite prevalent upon the leaves of the Chrysanthemum, blotching them with brown until they wither and fall away. Moisture favours the development of these spots very greatly. Some varieties seem to be more subject to the blight than others, but probably all will take it when the conditions are most favourable and the spores are present. The same fungus was found by Prof. Beach at the Geneva (New York) Station on the foliage of greenhouse Chrysanthemums."

Prof. Beach writes of the disease as follows:—"It first appears in small brown spots, which increase in size and number until the leaf tissue dies and the foliage drops off. In badly-diseased plants nearly all the leaves wither and fall away. During the past year (1894), the Septoria has become more or less common on cultivated Chrysanthemums, and will likely prove one of the troublesome species of fungi. Experiments with fungicides for this pest have been carried out at the Geneva Station, and it is recommended, after the removal and burning of the spotted leaves, to cover the remaining foliage with Bordeaux Mixture. It is said that 'five or six applications will usually be sufficient to keep the foliage covered, especially if the soap is used.' The following formula for the Bordeaux Mixture is given:—Dissolve two pounds of copper sulphate (bluestone) in water, add whitewash made of one and a half pounds of fresh-slaked lime, and dilute to 22 gallons of water; then add enough soap to form a suds."

In Bulletin 121 of the Ohio Agricultural Experiment Station, it is stated:—"Leaf spot (Septoria chrysanthemi) is frequently a disfiguring disease in the earlier growth of the plant. For indoor treatment a copper sulphate solution (one pound to 50 gallons of water) will prove available. More applications will be required, but the foliage will not be rendered so unsightly as with Bordeaux Mixture, which, however, may be applied in full strength."

The time here recommended for applying the fungicide is first about July 1, with a second application two weeks later, and similarly a third if necessary.

The disease is noted also in the *Report of the Maryland State Horticultural Society*, vol. iv., 1902.

* Report of the Botanical Department of the New Jersey Agricultural College Experimental Station, 1891, p. 298, and 1894, p. 363.

On the Continent the disease is becoming prevalent. It was recorded from greenhouses in Copenhagen in 1897, and is now known from a number of places in Italy and Germany. In October, 1904, October, 1905, and in August, 1906, it occurred in the form of an epidemic in nurseries in Berlin. Last year it was recorded† from Bohemia, in greenhouses, with the following note:—"The fungus is a dangerous parasite, especially in glasshouses, where it soon attacks the majority of the leaves and causes them to fall."

Prof. Magnus,‡ in a recent article, has pointed out that the correct name for the present fungus is *Septoria chrysanthemella*, Sacc. *E. S. Salmon, F.L.S., Mycologist to the South-Eastern Agricultural College, Wye, Kent.*

THE HARDY FLOWER BORDER.

LINARIA TRIORNITHOPHORA.

THIS is a distinctly attractive member of the Toadflax family, and, though said to be a native of southern Europe, is apparently fairly hardy, as it came through the last severe winter unharmed. It grows to a height of 3 feet, and its rich, rosy-purple, yellow-lipped blossoms, borne in great numbers on the branching flower-spikes, are distinctly handsome. It has now been in bloom in this garden for three months, and will, apparently, continue to flower until checked by the frost. The plant has about a dozen flower-stems, and is a showy object in the border. The blossoms are $1\frac{1}{2}$ inch in length. Many self-sown seedlings are springing up around the plant. The leaves are lance-shaped, and are carried in whorls of four. The species is said to stand the winter unprotected in the neighbourhood of Windermere. *S. W. Fitzherbert, Devonshire.*

DIGITALIS PURPUREA.

THIS biennial, in its several varieties, should be more popular than it is, the plant being stately and beautiful when in bloom. Foxgloves succeed as town plants if accorded frame culture in the winter; otherwise, in smoky towns they are apt to be injured by blacks and dirt settling on the leaves. Seeds sown in August will produce good flowering plants, which should be transplanted into well-drained soil at 10 inches apart,

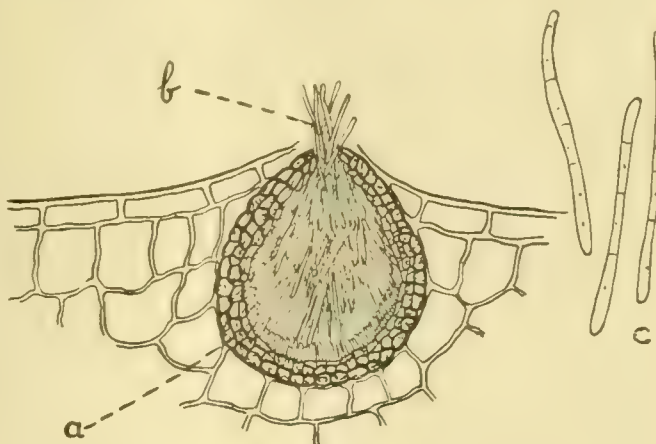


FIG. 92.—LEAF-SECTION OF CHRYSANTHEMUM AFFECTED WITH SEPTORIA CHRYSANTHEMI.

a, pycnidium; b, spores escaping from interior of pycnidium; c, three spores highly magnified.

lifting them in October and planting them in cold frames if that method is called for by the position of the garden. They may be transferred to the open ground late in March and in April. The plants make showy groups in the foreground of shrubberies, alongside woodland

† Hedwig, xlvii., p. 294.

‡ "Ueber die Benennung der Septoria auf Chrysanthemum indicum." (*Ber. Deutsch. Bot. Gesellsch.* xxv., 293-1907).

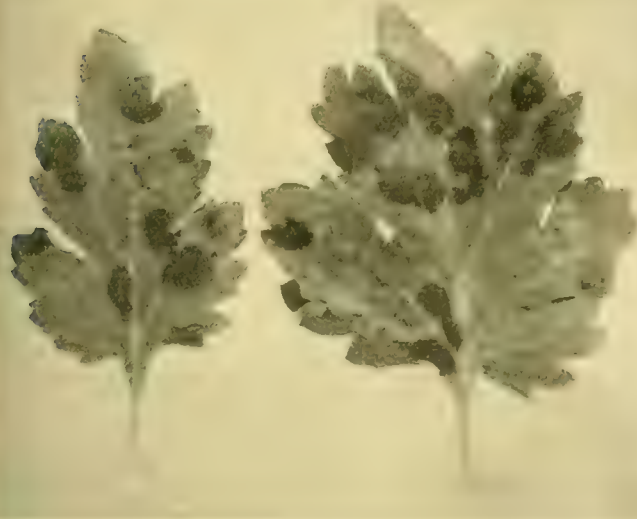


FIG. 91.—CHRYSANTHEMUM LEAVES AFFECTED WITH SEPTORIA CHRYSANTHEMI.

already known. The ringed brown spot (*Septoria chrysanthemi*) has apparently been confined to Italy. This is the most essential to be watched of all, since it is European."

Last autumn, Mr. W. P. Bound, of The Gardens, Gatton Park, Reigate, Surrey, sent me a fungus disease which he had observed on his Chrysanthemums. Having recently had an opportunity of comparing this fungus with the authentic examples of *Septoria chrysanthemi* (Cav.) in the Herbarium of the Natural History Museum at South Kensington, I have ascertained it is the same species. Gardeners have now consequently every reason to be on their guard during the coming season against this Chrysanthemum leaf-spot, which appears to be a new disease so far as this country is concerned.

Mr. W. P. Bound writes that he had never observed the disease before last autumn, and reports as follows on its occurrence:—"The variety attacked was 'Letrier.' There was a general disfigurement of the plant, but the flower was not affected. The disease occurred also to a slight extent on 'Mrs. Thompson' Both the above-named are late varieties. I feel pretty sure that we had it on some of the early-flowering varieties, but we took little notice of it at first. There were no signs of it till after the plants had been taken into the house."

The disease can be recognised by the presence of more or less rounded spots of varying size on the upper surface of the leaf (see fig. 91). These spots soon turn to a dark reddish-brown, and these dark patches, which consist of diseased tissue, besides disfiguring the plant for ornamental purposes, render the leaves unable to carry on their proper functions; and the plant in consequence becomes weakened in vitality. When the fungus produces its fructification, little black dots become visible scattered over the discoloured areas of the leaf. A section of a part of a diseased Chrysanthemum leaf, showing the fructification of the fungus, is drawn in fig. 92. At *a* is shown the fructification, or "pycnidium," as it is called. The spores of the fungus are produced in countless numbers from the inner surface of this "pycnidium"; in damp weather the spores may be seen escaping in hundreds from the mouth of the "pycni-

walks, and in beds by themselves in the flower garden. There are several fine strains, and the best of these are Ivery's spotted and *D. gloxiniaeflora*. The seeds being very minute, care should be taken to sow them thinly in broad pans filled with sandy soil, finely sifted, and consisting of one-third peat, one-third loam, and one-third leaf-mould. *F. M.*

STOCK-FLOWERED LARKSPURS.

FREE-GROWING annuals that produce bright flowers suitable for furnishing vases, &c., in the dwelling-room, are of much value in the garden. I recently saw in the gardens at Cricket St. Thomas, near Chard, a row, 20 yards in length, of a fine strain of Larkspur, known as Sutton's Branching, Stock-flowered. The plants possessed a compact habit, were about 3 feet in height, and had flowers of a mixture of colours, including rosy-scarlet. During a long experience in gardening I have never seen anything more ornamental than these plants in flower. Near by were planted clumps of Sweet Peas. These, with the Larkspurs, furnished flowers in plenty. For planting amongst shrubs, including Rhododendrons, and in the herbaceous border, no plants are more suitable than the Larkspurs. *John Crook.*

PLANT NOTES.

COSTUS IGNEUS.

It is just a quarter of a century since this showy flowering plant was introduced from Bahia by Mr. Linden, of Brussels. Twelve years after its introduction the species was given a first-class certificate by the Floral Committee of the Royal Horticultural Society. Similar to other members of the genus, it develops from a thickened root-stock a number of stout, upright, leafy stems. The stronger of these are terminated by cone-like inflorescences, which develop their flowers in succession for a considerable period. The individual flowers are about 2 inches in diameter, and are of an intense orange colour. They are thin in texture, and individually do not last long, but, as above-stated, each head bears many blossoms. The flowering season extends from autumn until early in winter, and on a dull November day I know of nothing more beautiful than the flame-coloured flowers of this *Costus*. The temperature of a stove is necessary for its successful culture, and it may be either grown in pots or be planted out in the border. When grown in pots, it blossoms when only 18 inches or 2 feet in height, but when planted out in rich soil the plants grow much taller. The rooting medium should consist of a mixture of loam and leaf-mould in equal parts, with the addition of a little dried cow manure and a liberal quantity of rough, silver sand. Propagation is readily effected by division of the roots during the spring months. When growing freely, effective drainage and a liberal supply of water are very necessary to the plant's requirements.

LOTUS PELIORHYNCHUS.

THIS Teneriffe species of *Lotus* is now generally well known in gardens. It forms a desirable subject for growing in hanging pots or baskets, and when the plants are in good condition the long, slender shoots, clothed with sprays of bluish-gray, needle-shaped leaves, hang down for considerably over 3 feet. The plant, in the absence of flowers, has somewhat the appearance of a species of *Asparagus*. In the spring or early summer, when it is studded with its blossoms, which in shape much resemble those of *Chanthus puniceus*, it forms a very beautiful feature in the greenhouse or conservatory. Within the last few years this *Lotus* has been employed for bedding purposes, and in Hyde Park this season a very uncommon yet

effective edging to a large bed of mixed subjects is formed of *Lotus peliorhynchus*, associated with the golden-leaved Creeping Jenny (*Lysimachia nummularia aurea*), the shoots of these two plants being entwined together. Another edging to a large bed of *Oreocome Candollii*, interspersed with *Lilium speciosum album* and *Verbena Miss Willmott*, is formed of the purple-leaved form of *Ajuga reptans*. The *Lotus* under notice may be propagated by means of seeds which may be obtained from most nurserymen, and by the young growing shoots. These latter should be taken off at a length of about 1½ inch in the spring-time, and be inserted in well-drained pots filled with sandy soil. If placed in a warm propagating-case that is kept close they will soon form roots. *W.*

The Week's Work.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Begonia Gloire de Lorraine.—This universal favourite may be had in bloom at any period of the year, but the plants are most appreciated in the autumn and winter months when out-door flowers are scarce. A batch of the more forward plants should now be allowed to bloom, by ceasing to pick off the buds. As the flowers develop, overhead syringings should be discontinued, but damping between the pots should be done daily, as a dry atmosphere tends to encourage insect-life. Ventilate the house freely on all favourable occasions, and when the plants are in full bloom leave a "crack" of air on all night to cause the air to circulate. The variety "Turnford Hall," with white flowers, succeeds under similar conditions. It is a beautiful plant when well grown, and a good companion to the pink-flowered varieties. The later-raised plants should be kept growing strongly, pinching out all bloom for the present in order that the plants may furnish a useful succession to the earlier batch. Stake and tie the growths as required, using very fine pieces of green-dyed Bamboo points, neat staking being very essential to plants required for decoration. But little shading will be required after this date except in very hot situations. Close the house early in the afternoon in order that the plants may get the benefit of the sun-heat, and the atmospheric temperature of the house may be permitted to rise to 85°, but should decrease during the night to a minimum of 60°.

Winter-flowering Pelargoniums.—The plants having been fully exposed all the summer have now their growths thoroughly ripened, and should be allowed to develop their flower spikes. Preparations should be made to place them under glass in a light house, having a sunny aspect. Stage them thinly and as close to the glass as possible, as every ray of sunshine is necessary during the winter months. Apply a top-dressing in the shape of a little good artificial manure, mixed with fine leaf-soil and sand. The roots will soon extend into this and derive great benefit from the stimulant. After housing the plants keep the ventilators wide open day and night for the present, and if the weather continues warm, spray the plants slightly with water every afternoon. When the weather becomes dull and damp maintain a little heat in the water pipes and ventilate accordingly, keeping the atmosphere of the house at night at a minimum temperature of 55°. The temperature may rise during the day with sun-heat to 65°, but the house should then be ventilated freely. These plants will not succeed in a close, stuffy atmosphere, nor in one where cold draughts of air are permitted.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq., Norwood, Alloa, Clackmannanshire.

The late vines.—Late Grapes that will be expected to keep in good condition on the vines throughout the winter should become perfectly ripe during the present month. Admit an abundance of air to the vinery and keep the atmosphere dry at all times. Remove the laterals as they appear. Cover the inside borders with short, mown grass to prevent evaporation from the soil. Maintain a circulation of heat in the pipes to expel any moisture from the atmosphere. Examine the bunches daily and

cut out any decayed berries as soon as they are seen. Keep a sharp look-out for red spider, and should this pest be discovered, sponge the leaves with soft soap and warm water.

Forced vines.—The vines from which the fruit was removed in the month of May should be pruned during the present month if it is intended to force them again next season. Prune the laterals back to two eyes. Wash the canes well all over with hot water and Gishurst Compound. If red spider or other insect pests have been troublesome, apply at least three dressings of the Gishurst Compound. Be careful not to injure the buds. Cleanse the house thoroughly. Remove the surface soil of the inside border down to the roots, and top-dress the roots with rich turfy loam mixed with some approved Vine manure. Have done any painting that may be necessary, and make everything clean before the time arrives to commence forcing.

Tomatos.—Plants for fruiting in autumn and winter, and which were potted into 9-inch pots last month, need to have ventilation by day and night. Afford them manure water once each week, and see that they are always supplied with sufficient water. Train the plants on the single stem system, and take out all lateral shoots as soon as they appear. As soon as the apex of the plant reaches its limit of space stop the growth by pinching out the point. As the days will soon be short and dull it will be necessary to artificially pollinate the flowers, or they will not set freely. A sharp tap on the stake or trellis occasionally should be sufficient to effect pollination. Do this when the sun is shining and the ventilators are open. Fumigate the house with the XL-All if any white fly is discovered. Tomato plants intended for fruiting early should now be in 3-inch pots. Let them be arranged on a shelf or in a frame near to the glass to induce short-jointed growth. Admit plenty of air during fine weather. Plants now in full bearing should have their leaves shortened to expose the fruit to the full benefit of the sun and light. If it is necessary to remove any plants now bearing a crop, they can be severed from their roots and suspended in a vinery, or other cool, well-ventilated house, when the fruits will soon develop colour, and afterwards be useful for culinary purposes. Top-dress any plants that require it, applying rich loam in which a little chemical manure has been mixed. Make this dressing firm over the surface of the roots, and afford a good watering with tepid water.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Surrey.

The value of sunshine.—The summer-like weather that has prevailed recently is favourable to the plants, as it will assist them to thoroughly ripen their growth. Especially is this desirable in the case of *Dendrobiums* that have finished growing. If such plants are in a house that is properly ventilated they will stand as much direct sunshine as is likely to be experienced at this season, and, being thus exposed to sun and air, will require considerable water at the roots. These remarks also apply to the *Catasetums*, *Cynochos*, *Mormodes*, *Lissochilus*, the deciduous *Eulophias*, *Thunias*, *Pleiones*, *Habenarias*, *Cyrtopodiums*, *Schomburgkias*, the Mexican *Lælias*, as *L. anceps*, &c., also many *Epidendrums*, as *E. radicans*, *E. xanthinum*, *E. O'Brienianum*, *Epiphronitis Veitchii*, &c. The deciduous *Calanthes* that are finishing their new pseudo-bulbs will also receive great benefit by exposure to extra sunshine at this season. The period of sunlight will be less each day, and as the atmosphere becomes cooler and moister, especially at night, the watering of Orchids generally must be carried out with even greater discretion than usual, gradually reducing the quantity as the season advances. There are few Orchids that have greater need for a light, well-ventilated atmosphere at this season than the *Cattleyas*, especially when there is plenty of sun-heat; even where the house is fully exposed, the plants will only require to be thinly shaded for an hour or so during the hottest part of the day.

Vandas of the *V. tricolor* section which occupy a position in the *Cattleya* house should be shaded independently of the other inmates: the terete-leaved *Vandas*, as *V. teres*, *V. Hookeriana*, *V. "Miss Joaquim"*, and *V. Marguerite Maron* (*V. Marguerite Maron* being now in bloom), should be kept in the warmest house and

exposed to the sunlight. They will require frequent overhead syringings so long as the weather continues warm and bright. Our plants are growing on upright teak-wood rafts, and periodically we examine them, and tie the points of the young roots close on to the rafts, to which they cling with tenacity, thus greatly assisting the formation of strong flowering growths.

The cool intermediate house, which contains such plants as *Cælogyne*, *Maxillaria*, *Miltonia*, *Cypripedium*, *Cymbidium*, *Brassia*, *Oncidium*, *Zygopetalum*, some *Epidendrums*, and many other Orchids which are still growing freely, will only require to be moderately shaded. The *Odontoglossums*, *Masdevallias*, *Oncidiums*, &c., in the cool house should be protected from strong sunshine at all times.

The heating apparatus.—Everything connected with the heating apparatus should be put in order at once, so that the Orchid grower may be prepared for frosts, which sometimes suddenly appear during October.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to LORD CLINTON, Bicton, East Devon.

Apples.—The Apple crop generally is small, and extra care should be taken in harvesting and storing this fruit, for Apples will be very valuable during the coming winter and early spring months. Birds are persistent in their attacks on this fruit, especially early ripening varieties, and those that have a soft flesh, such as *Ecklinville Seedling*, *Pott's Seedling*, *Wealthy*, *Emperor Alexander*, &c. The sound fruits should be placed in the fruit room, and those not likely to keep well should be consumed first. Any fallen fruits that are infested with maggots should be collected, smashed, and buried in a deep trench, or be burned on the garden fire. This will destroy many of the grubs of this pest. *Devonshire Quarrenden*, *Worcester Pearmain*, *Colonel Vaughan*, *Lady Sudeley*, *September Beauty*, and *King Harry* are suitable varieties for dessert purposes at this date. Apples intended for keeping will require to be sufficiently matured, and should not be gathered until they will part easily from the tree.

Strawberries.—Established plants will continue to develop runners, but these must be removed. Use a knife for severing them, as in pulling them out the crowns are often destroyed. Autumn-fruiting Strawberries are furnishing us with some good fruits from a north border, but the birds are troublesome amongst them, although the plants are protected by nets.

General remarks.—The recent warm weather has caused the ground to become dry in many places, especially where the soil is light or shallow, so that late Plums and Peaches occupying warm positions on walls or fences may be greatly benefited by root waterings. The foliage should be syringed every alternate evening during hot weather, but the water should not be allowed to reach any fruits that are ripening. Wasps and flies are busy amongst ripe fruits, which need careful guarding from their attacks. The weather for the week ending the 13th inst. has been grand, and has benefited all crops. Hoeing can be practised with advantage during hot weather, but when the climatic conditions are wet, hoeing is of little use in the destruction of weeds.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq., Cobham Park, Surrey.

French Beans.—Plants which are nicely in bearing should be protected with covering material each night, for although, at the time of writing, there has not been, in this district, any frost, there can no longer be any certainty that frost will not occur. Therefore, it is imperative to make the necessary provision for affording protection, in order that the crop, which might otherwise be lost in a single night, may be preserved for some considerable time to come. Cold frames containing Beans should now be kept closed, except in the hottest part of the day, when sufficient air may be admitted to keep the Beans from damping. If a little heat can be applied, this would now prove a great benefit. Where it is intended to maintain a supply of French and Butter Beans throughout the winter, sowings in pots must be made at

frequent intervals. For the present the pots may be placed outside or in a cold frame; but they will require to be removed to a warm house as the season advances and the days get shorter.

Cabbages.—The main batch will now be ready for planting, and, provided the ground has already been well prepared, and it has received a good dressing of lime and a little potash or wood-ashes, the work of planting should be carried out at the first opportunity, and during showery weather, if this is possible. Ground that has produced a crop of Peas would be very suitable for the Cabbages. Should the soil be dry, let the drills be given a good soaking with water the day before the planting is commenced, rather than apply water afterwards. The drills should be drawn at distances of from 15 to 18 inches apart, according to the different varieties grown, and the plants may be put out at distances of 1 foot to 15 inches in the rows. Previous to making the main plantation, select a good proportion of the forward plants for planting on a warm border, that they may come in a little in advance of the bulk; this little attention is well worth the trouble, as a few small early Cabbages are greatly appreciated when they first appear.

Early Potatoes.—If seed-tubers were obtained from the imported Jerseys, as was advised in the Calendar for July 13, and thoroughly well "ripened" before they were put into boxes, sets will now be available, thoroughly well rooted and already in growth. These should be planted forthwith into frames. Prepare drills for the tubers, and place some well-decayed leaf-mould in the bottoms of them; on this material lay the tubers, covering them with additional leaf-soil, and afterwards filling in with soil. If the weather is fine, considerable air may be admitted to the frame during the day. Lightly syringe the plants in the afternoon before closing the frame for the night. As growth advances, admit air freely on all favourable occasions, being careful not to over-heat the pipes and not to permit cold draughts, which would weaken or severely check the plants. Although this variety succeeds well for the earlier plantings, it should be followed as closely as possible by *Sharp's Victor*, or the *Duke of York*.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Propagating shrubs.—Most of the hardier species of shrubs may be readily propagated from cuttings, inserted out-of-doors at any time from the present date until the end of the autumn. A bed of a suitable size should be prepared for their reception: the soil should have incorporated with it sufficient leaf-soil and grit to form a suitable rooting medium. After making the ground firm, shallow trenches, 4 or 5 inches deep, should be made with the spade, keeping one side perpendicular, so that the cuttings may easily be kept erect. A common mistake is that the cuttings are made too short; from 7 to 9 inches is a suitable length. Even in the case of shrubs which have small leaves, the cuttings should be allowed plenty of room between them, and sufficient space should be left between the rows to allow the hoe to be freely worked. Tread the soil about the cuttings to make it firm; a layer of fine soil spread over the bed will assist in keeping the cuttings firm, and prevent the frost from penetrating to the base of the cuttings. Deciduous subjects, including *Catalpa*, *Paulownia*, and *Koeleruteria* root readily, if cuttings are taken in January or February, inserted deeply in soil of an open texture, in 6-inch pots, and plunged over a brisk bottom heat.

Propagating Conifers.—Many Conifers, such as *Cupressus* (including the garden genus, *Retinospora*), *Thuya*, and *Juniperus*, may be readily propagated if cuttings are firmly inserted in boxes of soil and placed against the north side of a wall, where it is free from drip. Shoots of *Athrotaxis*, *Cephalotaxus*, and *Cryptomeria*, are rooted with more difficulty, and in propagating plants of these genera it is often advisable to shift the cuttings into fresh boxes of soil early in the following year, and then place them in a gentle bottom heat.

Wind-re-boxes.—In gardens where a duplicate set of boxes are maintained, those intended for

use during the winter should now be planted. As in the case of the boxes used for a summer display, the soil employed should be of good quality. Where brightness is desired it is not wise to rely too much on the various flowering plants which are used for spring bedding, for even under the most favourable conditions there is always a considerable period before their flowering commences. Greater use should be made of shrubs which have golden and silver variegated foliage, such as well-grown dwarf plants of *Hollies*, *Euonymus*, *Conifers*, *Vincas*, and *Ivies*. Spring-flowering bulbs may be interspersed with these, and, after they have flowered, be removed without greatly disarranging the box. There will also be room for a few plants of *Wallflower* and *Primrose*. A small plot in the reserve garden should be planted with various successional plants, so that as the earlier subjects finish flowering, they may be at once replaced. These winter window-boxes should not be placed in position until, through frost or other cause, the plants in the summer boxes are injured and need removal.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

The giving of flowers.—Park officials receive from time to time, from private individuals as well as from public bodies, applications for the donation of cut flowers or evergreens suitable for decoration or sale. When no hard and fast rules are observed in connection with this matter, it is often difficult to deal with such applications without giving offence. In the case of public institutions, such as hospitals, rooms in libraries, botany, or painting classes in connection with schools, or the decoration of municipal buildings for public functions, the parks department may very properly be expected to help by providing a supply of cut flowers. Even individual ratepayers, requiring cut flowers for botanical purposes, or as models to paint from, should be entitled to obtain them in a prescribed manner from the public gardens of a town. In this case, to prevent abuse, it is usual to issue students' tickets to those desirous of taking advantage of this privilege, and as only one member of a park staff is authorised to supply the flowers, the various students soon become known to him and he would soon find out any who were likely to put the flowers to other uses. The institution of the students' ticket, with its privileges, in many public parks has proved a boon to students of botany and painting. Apart from the foregoing cases, the question of giving away cut flowers is rather a difficult one for most park officials—to whose discretion such matters are usually left—to deal with. How far one is justified in giving flowers from a public garden, to be sold at a bazaar in aid of charity, or for the embellishment of a concert hall or the platform of a public meeting, depends very largely upon the precedent already set by the corporation concerned. It will be generally agreed that, apart from the needless work entailed, the less this kind of thing is done the better it is for the park officials, as there is the less chance of any kind of abuse and its attendant unpleasantness creeping into the management of the department.

Harvest Festivals.—At the same time it is possible to afford considerable help to different public bodies without either incurring much expense or laying the department open to adverse criticism. In this neighbourhood nearly every religious denomination has at this season of the year what is known as a Harvest Festival, when their places of worship are decorated with flowers and fruits, which are afterwards sent to the local hospitals or the homes of the poor. For a number of years past the parks committee of this city, realising that flowers are at this period of the year very plentiful in the public gardens, has allowed every church of all denominations in the city to have a few cut flowers on the occasion of its Harvest Festival. Thus without in the least marring the beauty of the flower borders, a great amount of satisfaction and pleasure is given to all classes and conditions of the community. During the ten years that this practice has been carried out no single instance of the misapplication of the flowers has been brought to our notice.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, SEPTEMBER 21—German Gard. Soc. meet.

TUESDAY, SEPTEMBER 24—Nat. Rose Soc. Autumn Sh. at R.H.S. Hall, Westminster.

FRIDAY, SEPTEMBER 27—Roy. Botanic Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich 55°0'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, September 18 (6 P.M.): Max. 68°; Min. 51°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, September 19 10 A.M.): Bar. 30°4; Temp. 61°; Weather—Sun-shine.

PROVINCES.—Wednesday, September 18 (6 P.M.): Max. 62°; Scotland N.; Min. 60°; Lancaster.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—

Sale of Dutch Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY TO FRIDAY—

Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

MONDAY—

Clearance sale of Stock, Greenhouses, Piping, Boilers, &c., at Thorne Nursery, White Hart Lane, Barnes, by Protheroe & Morris, at 12.

TUESDAY—

Clearance sale of Stove, Greenhouse, and other Plants, Garden Seats, and Sundries, at Leigham Holme, Leigham Court Road, Streatham Hill, by Protheroe & Morris, at 1.

WEDNESDAY—

Azorean Liliums, Roman Hyacinths, Narcissus, &c., also Palms and Plants, Bays, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 5.

FRIDAY—

Fifteenth annual sale of fruit trees, &c., at the Nursery, Downham, Norfolk, by order of Messrs. Bird & Vallance, by Protheroe & Morris, at 12.

Duplicate and other Orchids from the collection of Eustace Clarke, Esq., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

We have already referred in **Linnæus**. these columns to the celebrations of the bicentenary of the birth of this great Swedish botanist that have taken place this year. On the present occasion we desire to draw attention to an interesting exhibition of memorials of Linnæus now on view at the Natural History Museum, South Kensington. Dr. A. B. Rendle, the Keeper of the Botanical Department, has prepared a guide* to the portraits, autographs, manuscripts, and books. This exhibition occupies the second botanical bay on the right hand side when entering the great hall.

A good selection of autographs and manuscripts of Linné from the Department of Manuscripts of the British Museum has been made by Dr. G. F. Warner, the Keeper of that Department, which adds considerably to the interest of the exhibition. The Department of Prints and Drawings has lent the large engraving of Linné in his Lapland dress and a portrait of his favourite pupil, Dr. Solander, who in 1765 came to England to assist Sir Joseph Banks in his herbarium, accompanied him in Cook's first voyage round the world, and was appointed Keeper

of Printed Books in the British Museum in 1773.

From the Linnéan Society a number of books and specimens have been lent from Linné's own collections, and a fine series of 11 portraits of Linné, presented by Dr. Wm. Carruthers, F.R.S., who represented the Linnéan Society at the Upsala celebrations.

The original letter from Herman Boerhaave, Professor of Botany at Leyden, to Sir Hans Sloane, introducing Linné, when visiting this country in 1736, and Linné's letter to Sir H. Sloane, thanking him for the use of his museum, are both to be seen in this collection. From Linné's own herbarium a species of *Carduus* (Thistle) is shown, illustrating his method of conserving plants. Of more interest is a dried specimen of *Linnæa borealis*, it being the original specimen collected by Linné at Lychsale in Lapland, which he submitted to his friend, Dr. Gronovius, of Leyden, with the suggestion that it should bear his name, Linné expressing a fanciful analogy between his own early fate and "this little northern plant, long overlooked, depressed, abject, flowering early." The specimen is from Gronovius' herbarium, which Sir Joseph Banks bought in 1794, and is now in the Department of Botany at the Natural History Museum.

From Linné's works, besides his *Systema Naturæ*, &c., the original water-colour drawing made by Ehret, under the direction of Linné, with the names in Linné's handwriting, is exhibited. Both men were engaged at the time at work on the *Hortus Cliffortianus*. This plate was engraved for the first edition of the *Genera Plantarum*, published in 1737 at Leyden.

The third case contains Paul Hermann's herbarium of Ceylon plants. It was sent in 1745 by Augustus Gunther, an apothecary, at Copenhagen, to Linné, who based upon it his *Flora Zeylanica*, published in Stockholm in 1747. Sir Joseph Banks purchased this herbarium from Gunther, and it is now in the Botanical Department of the British Museum.

In the wall-case on the left of the bay are shown a number of reprints of Linné's works, and several publications issued in commemoration of the bicentenary of Linné's birth; also a bronze copy of the bicentenary medal presented to Sir Joseph Hooker on May 25, 1907, by the Royal Swedish Academy of Sciences.

Altogether, the exhibition is one which should have much of interest to botanists and gardeners.

A correspondent has written us somewhat indignantly in respect to the prices he has to pay for flowering bulbs. He states that before sending his order to an English firm he compared the prices printed in the catalogue with the charges made for the same sorts by a Dutch firm, and found that on an average the English prices were nearly fifty per cent. higher. We cannot determine whether our correspondent is the more incensed at the English firm for charging higher prices than the Dutch seedsman, or with the Dutchman for daring to undersell the Englishman; he complains of each in turn. The prices charged by nurserymen for

their goods is not a matter in which we desire to interfere or in which we have any right to do so, but it may be well to point out to our correspondent that there are several circumstances in connection with the subject that he may not have taken into proper consideration.

Prices cannot be determined as excessive, or as cheap, merely from an examination of the catalogues. Bulbs or seeds, or plants of a particular variety appear much the same as one reads the descriptions in a catalogue, but the samples offered for sale may vary in quality to a greater extent even than the prices asked for them. We are not concerned with the particular circumstances in the case which has engaged the attention of our correspondent, and have no desire to determine which firm gives the better value for the money it receives. It is conceivable that the firm which asks the lower prices also supplies the better articles. If this be so, however, matters may be left to right themselves, for eventually the public will discover which is the best market, and, having obtained that knowledge, will be certain to act upon it. But there are many things to consider in all purchases, over and above the amount of money that is paid for them.

A consignment of bulbs, even of the same variety, when lifted from the nursery, might easily be sorted into three or more grades or qualities, and if these were so graded and subsequently sold at similar prices, those who were supplied with the third grade would have reasonable cause for complaint. In different nurseries where the nature of the soil and the details of cultivation vary one from another, the disparity in the quality of the produce would be proportionately greater, and consequently afford facilities for the exercise of a wider selection.

Another matter of first-class importance to the purchaser is that of correct nomenclature. If his seeds or bulbs are something contrary to what he has ordered, or if they are in the main true, but, nevertheless, contain many rogues, he is apt to consider the purchase dear, whether the goods were obtained for high or low prices. These are only some of the principal circumstances that affect prices, and they rule through every class of trade. Such matters as quick delivery, and careful packing, are scarcely less important.

If, as alleged by our correspondent, the Dutch firms sell the same quality of goods and delivers them free in this country, at prices averaging fifty per cent. lower than are charged by English seedsmen, it does not say much for the business enterprise of our own race, especially when it is remembered that certain Dutch growers offer rebates such as we have had occasion to remark upon in these columns. For ourselves, we cannot pretend to give an opinion on the matter, but must leave the seedsmen, whether British or Dutch, to adjust their prices according to the value they place upon the goods they have to distribute. Their customers, however, should not hastily conclude that prices are dear because they are high in comparison with others, or cheap because they are lower. If they are to be judged satisfactorily they must be compared after a careful inspection of the articles for which they are charged.

* Memorials of Linnæus, Special Guide No. 3, British Museum (Natural History), price 3d.



LOMATIA FERRUGINEA, A FLOWERING SHRUB FROM CHILE, GROWING IN EARL ANNESLEY'S GARDEN, AT CASTLEWELLAN, COUNTY DOWN.

(FROM A PHOTOGRAPH TAKEN BY EARL ANNESLEY.)

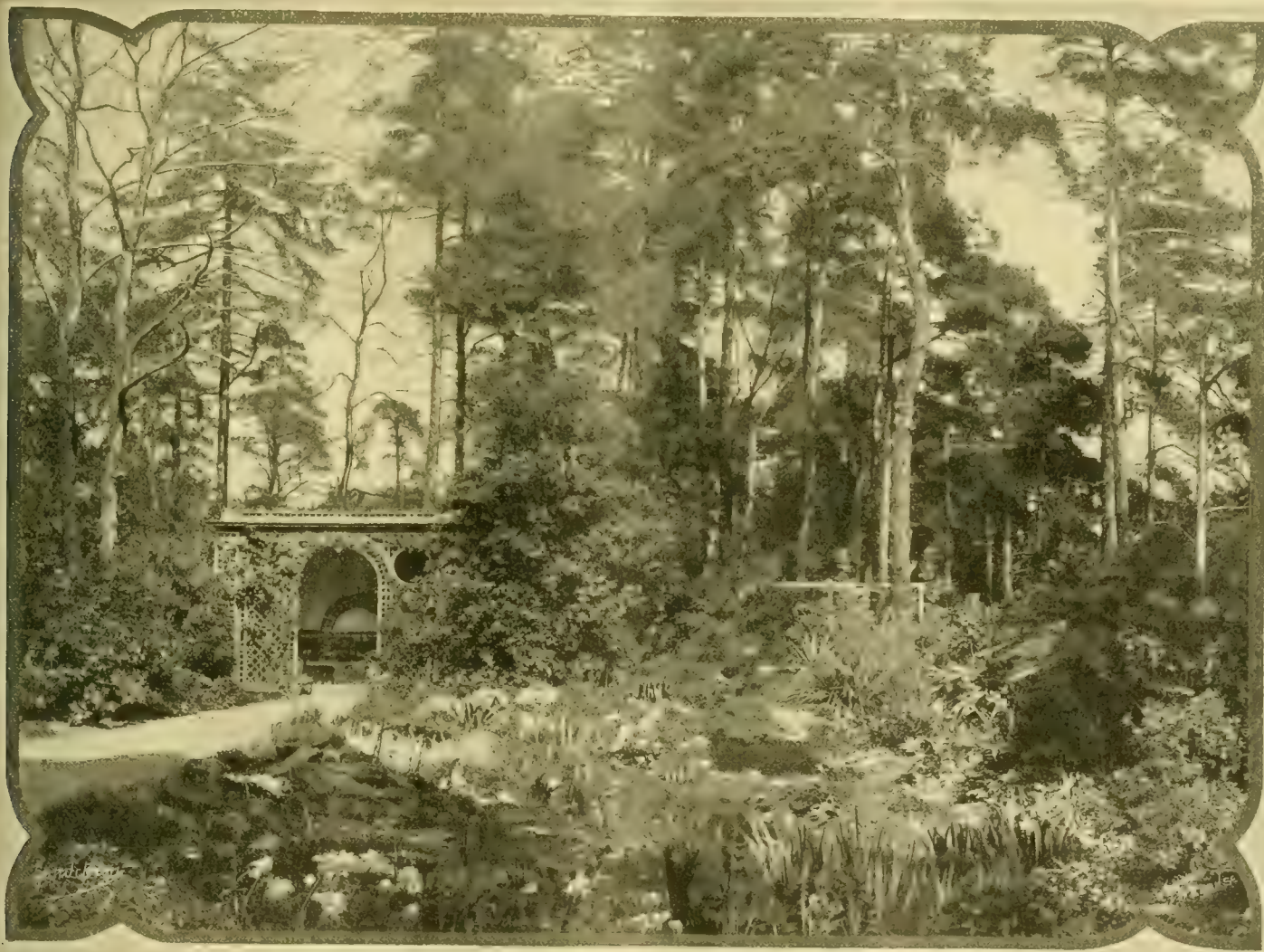
OUR SUPPLEMENTARY ILLUSTRATION.—The view shown in our supplementary illustration to the present issue represents a part of the Pine-tree belt which encircles the charming garden and dwelling at Fir Grange, Weybridge Heath, in which Mr. W. A. BILNEY has arranged a series of natural gardens. In this belt most of the important classes of hardy plants and shrubs are arranged without interfering with that beautiful feature of the property, the Pine trees, which had been there for many years before a modern garden was formed in the locality. Instead of disturbing the trees, paths were made amid rockeries and between sloping banks; nooks and dells were formed available for Ferneries, a bog-garden (see fig. 93), and Alpine garden. On the banks and beneath the trees many thousands of Daffodils,

little trouble in the future. The planting of Rhododendrons, Kalmias, Pernettyas and other evergreen flowering shrubs in due proportion among the deciduous species has had the effect of making the gardens capable of affording interest in winter.

AUTUMN ROSE SHOW.—The fourth annual autumn exhibition of the National Rose Society will be held in the Royal Horticultural Hall, Vincent Square, Westminster, on Tuesday next, the 24th inst. A feature introduced this year for the first time is a class for table decorations, the first prize being a silver cup of the value of five guineas, given by the president of the society, Mr. E. B. LINDSELL. The exhibition will be open until 8 p.m., in order that the flowers may be viewed under artificial light. The weather during

JOURNAL OF THE BRITISH GARDENERS' ASSOCIATION.—The second number of this publication has just been issued. It consists of 16 pages, and is a well-printed and attractive publication. Some of the principal articles include "Examinations for Gardeners," "The Saturday Half-Holiday," "Garden Apprentices," "The B.G.A. and the Trade," "Notes and Comments," "Gardeners and Nursery Training," and "The L.C.C., the R.H.S., and the B.G.A." The *Journal* is published at 3d., and copies may be obtained from the secretary, Mr. J. WEATHERS, Talbot Villa, Isleworth.

SEPTEMBER STRAWBERRIES.—We have received from Messrs. H. CANNELL & SONS, Swanley, some fruits of the variety of Strawberry known as



[Photograph by John Gregory.]

FIG. 93.—THE BOG-GARDEN AND SUMMER HOUSE AT FIR GRANGE, WEYBRIDGE HEATH. (See also Supplementary Illustration.)

Crocuses, hardy Cyclamen, Chionodoxas, Lilies, Scillas and other bulbous plants were planted, and their beauties when in bloom have often been described in the pages of the *Gardeners' Chronicle*. In the bog-garden, with the Bamboos, Yuccas, &c., on the higher ground and Irises in the front, the British Sun-dew forms an interesting patch growing in native sphagnum-moss, and *Sarracenia purpurea* thrives well. *Astilbe Davidii*, with its bright rose-coloured plumes, is a fine feature, and the *Hydrangeas*, *Chelones*, *Arundo conspicua*, *Anemone japonica*, *Lysimachias*, &c., make a good show. Pillar-Roses, Clematis and other flowering shrubs are in great profusion, and so carefully and skilfully has the garden been planted that it will continue to increase in beauty with but

the first half of September has proved favourable for Roses, so that an unusually large and beautiful display of blooms may be anticipated. The hon. secretary is Mr. EDWARD MAWLEY, Rosebank, Berkhamsted, Herts.

HORTICULTURAL CLUB.—The house dinners of the club will be resumed on Tuesday, October 1, at 6 p.m., at the Hotel Windsor. Mr. ARTHUR W. SUTTON will speak upon "A camping tour from Damascus to Petra in Arabia." The subject will be illustrated by painted slides from original photographs.

CHARLES HUBER, founder of the firm of M. CHARLES HUBER & Co., nurserymen, at Hyères, France, died recently, aged 89 years.

St. Antoine de Padoue. These fruits were of very large size for this type of Strawberry, and the trusses bore also a very great number of green fruits in various stages of development, showing that under the influence of the bright sunshine which has been prevalent since we received the fruit, the plants will yield a prolific crop of acceptable Strawberries. Ripe fruits of the variety St. Joseph have been sent us by Mr. W. SELLEY, Highlands Gardens, Ivybridge, Devon. These fruits had been picked singly, and were excellent for dessert, being sufficiently large in size, and of sweet and agreeable flavour. Our correspondent states that he has gathered fruits of St. Joseph since August 20 last, and that they ripen much earlier than the variety St. Antoine de Padoue.

MR. GEORGE DICKSON, V.M.H.—We gladly avail ourselves of the opportunity of reproducing the portrait of Mr. GEORGE DICKSON, to whom we alluded in our last issue. Mr. DICKSON is the chairman of Messrs. ALEXANDER DICKSON & SONS, Newtownards. He was born in 1832, is a Justice of the Peace for County Down, a member of the Down County Council, and chairman of the Committee of Agricultural and Technical Instruction for that county.

THE NATIONAL FRUIT GROWERS' FEDERATION.—A meeting of the Council will be held on Monday, October 7, at 3 p.m., at the Royal Horticultural Hall, Vincent Square, Westminster. At this meeting a revision of the rules, and re-organisation of the Federation will be considered.

THE LATE LORD ALDENHAM.—In the recent death of Lord ALDENHAM, at the age of 88 years, horticulture loses one of its most liberal patrons. Our columns have frequently borne testimony to the excellent gardening carried out at Aldenham House, Elstree, under the superintendence of his late lordship's gardener, Mr. EDWIN BECKETT. In recent years the gardens and grounds have been greatly extended, and the magnificent exhibits of flowering trees and shrubs contributed from time to time at the meetings of the Royal Horticultural Society have shown what a rich collection has been planted in the newer portions of the grounds. It is especially sad that on the following day to that on which Lord ALDENHAM died, the death occurred of his lordship's youngest son, the Hon. HENRY GIBBS, at the age of 46 years.

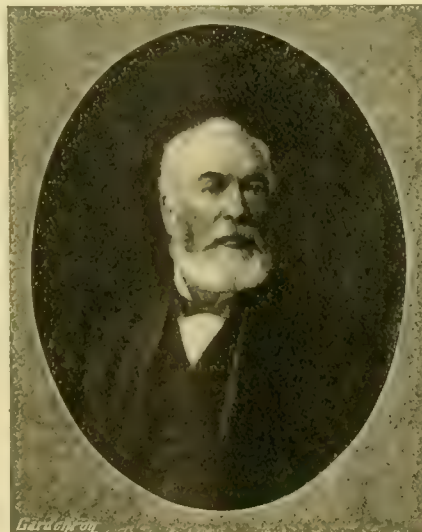
ELECTRIC LIGHT AND PLANT GROWTH.—Experiments are being conducted by Mr. B. H. THWAITES in the gardens of the Royal Botanic Society, Regent's Park, in respect to the culture of plants by the aid of the electric light. The plants receive the benefit of the ordinary sunlight during the daytime, and at night a powerful electric light enables the plants to carry on the work of carbon-assimilation. The light is obtained from a powerful lamp which travels slowly from one end of the house to the other, and returns again by an automatic process. A small engine generates the electricity, and the surplus heat from the engine is utilised for the heating of the glass-house in which the experiments are conducted. The cost of the gas, which serves the double purpose of heating the structure and driving the generating plant, is lower than that of the fuel consumed in an ordinary heating furnace necessary to maintain the same degree of warmth by means of a hot-water system. The rays of light from the lamp pass through a water-screen, and on emerging they form a spectrum approximating to that of ordinary sunlight. Particulars of Mr. THWAITES' system were given in *Gardeners' Chronicle* for September 8, 1906, p. 180, and in the issue for April 3, 1880, p. 432, details were published of experiments conducted by the late Sir WILLIAM SIEMENS in regard to the same subject.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

THE VETERANS OF PROFESSIONAL GARDENING.—Whilst the members of the British Gardeners' Association are at the moment of writing engaged in the task of determining the status and requirements of the professional gardener of the future, so far as it may be possible for any voluntary organisation so to determine, my mind during a time of sickness has been carried into the past rather than into the future. The biographies of gardeners may not offer very heroic stories, but there have been, and there are still, in the ranks of British and Irish professional gardeners men who have, through hard work and manly effort and faithful service, won very

high honours in their vocation, and have reflected upon it the highest lustre. Such men have been noble and illustrious workers. What the late beloved Dean Hole thought of those of whom I am writing is seen in the letter, so highly cherished, he wrote me from his sick bed in North Wales on September 30, 1903, just four years ago, and which referred to his "bitter disappointment" in not being able to attend the great dinner and gathering of gardeners in London a few days later. "I have been anticipating long and anxiously a meeting with so representative a body of those men among whom I have found the most congenial friendships and happiest enjoyments of my life. Will you tell them that with an old man's blessing, and from a brother's heart, I pray that they may ever cherish in themselves, and may communicate to others, that love of a garden which brings health to the body, peace to the mind, and thankful worship to the soul." Such a testimony as these words furnish to the worth and nobility of the British gardener deserves to be written in letters of gold. Well may the British Gardeners' Association desire to see in the gardeners of the future men who shall merit all the warm praise bestowed by Dean Hole on those of the present and past generations. Young men who are content to drift into their profession, rather than aspiring to shine in it, will do little to maintain that high standard which the best gardeners of the kingdom have so earnestly sought to create. If, through the aid of examinations, it be found



MR. GEORGE DICKSON, V.M.H.

possible to generate in young men some ambition to be of the best, some desire to be leaders, some effort to secure the greater knowledge without which no gardener can ever be a real one, then will the new association's labours have not been in vain. Were it possible to evoke from the dead the spirits of those great and good men who have done so much honour to gardening, what a procession of splendid reputations would be presented! But they are gone to rest in the great garden of eternity, where soon so many more of us will sleep. But we still have amongst us some fine old veterans. Would it were possible to have in London ere long one great social gathering of these veterans! Would the council of the Royal Horticultural Society, with its wealth, bring this about? How they would delight to gather once more together to fight over again with each other their bothy or youthful battles, and to recall to each other's memories the names and teachings of those who have gone before. We too soon forget those who have worked so illustriously in the field of horticulture. We so haste to live in the future that the past with its great dead is forgotten. It is, therefore, the more desirable that we should warmly cherish the veterans yet left to our esteem. A.D.

THE CHAMPION GRAPE CLASS AT SHREWSBURY.—I regret to find my opinions are not in accord with those of my old and esteemed friend Mr. Crump over the champion Grape Vase award at Shrewsbury. When making the

suggestion that in future the vase should not be won by any competitor who does not obtain at least six maximums, I had in mind several things. First, that famous grower Mr. Shingler, whose efforts have for several years past been the principal means of maintaining a high standard of excellence in this class, might possibly rest on his honours. This would make the competition easier, but the Champion Vase is so noble a prize that any person winning it may well wish to do so with bunches of the greatest merit. I have not before me the total number of points obtained by Mr. Shingler during the past three years, but, failing to accept my suggestion of at least six maximums out of 12 bunches to qualify for a vase win, is it too much to ask that during the three years which must elapse ere any competitor can again win such a trophy the total maximum of points to secure the full possession of the vase shall be not fewer than has been Mr. Shingler's winning total of three years? Another thing merits attention. Whilst Mr. Shingler's exhibit included six varieties of Grapes, the second prize exhibit comprised four varieties only. Having regard to the many fine varieties of Grapes in commerce, and the valuable nature of the prize, it is not too much to ask that at least six varieties must be shown by each competitor. Mr. Crump mentions there were 132 bunches to judge by points in the class. That means there were 11 exhibits. Does not that mean that some bunches must have been little better than third-rate as compared with those of the winning collection? I would like to point out, in the champion vegetable competition of nine kinds or dishes only, Mr. J. Gibson secured five maximums out of the nine, and was short of the total maximum by four points only. Five in nine is a much better standard than is three out of twelve. I trust whatever conditions may rule in the champion Grape class in the future—and all Grape growers will hope for its continuance—it may prove as successful, and never of lower merit, than was the new champion vegetable class at this show. D.

DUFF HOUSE.—It will be remembered that some months ago his Grace the Duke of Fife handed over as a free gift to the inhabitants of Banff and Macduff—two small and poor communities on the Moray Firth—the old and historic mansion of Duff House, together with the beautiful grounds attached to it, to be utilised in the best interests of the townsfolk. To maintain the grounds in a proper condition will involve the expenditure of a considerable sum of money, which the authorities do not possess; consequently weeds are beginning to grow, and the once neatly-kept grass verges and walks are now untidy. A suggestion has been considered for converting the mansion into a hydropathic establishment, whilst a well-known golfing expert has declared that the grounds are splendidly adapted for a golf course. This part of Scotland is especially picturesque, and on every hand the visitor will find something of charm, some shady walk or breezy seashore, some upland that presents a fine sweep of view. There is also Duff House, the grounds of which include twining paths by the Deveron side—a most beautiful river—winding in and out on the way to the picturesque Bridge of Alva, that spans at one leap the deep gorge that hems the river between its rocky walls. Truly, Banff has decided attractions—attractions which will appeal to all who desire a quiet, healthful scene, and these attractions deserve to be more widely known. Cor.

ASSOCIATION OF PARK SUPERINTENDENTS.—In the *Gardeners' Chronicle* for August 17 reference was made to the annual meeting of the Society of Park Superintendents of America, and the opinion was stated that a similar society would be likely to succeed in this country. I consider that the benefits to be derived from such an association and the holding of a conference annually, with lectures, &c., bearing upon the management of public parks, would be very helpful. I hope other superintendents will express their views, believing that the suggestion made in the note already referred to should be acted upon. The annual meeting could be arranged to be held in the metropolis the first year, and in important provincial towns afterwards. A. Waters, *Queen's Park, Heywood, near Manchester.*

THE PINK-FLOWERED CLOVE CARNATION.

—I have read with interest the correspondence concerning the pink-flowering *Clove Carnation*. I was concerned with the introduction of this new variety, and I should like to state the following remarks. Mr. Woodgate, p. 205, says: "Mr. C. Young correctly stated the origin of this variety, and that the pink-flowered *Clove Carnation* mentioned by Mr. Alex. Dean, on p. 172, probably came from Warren House." The original plant of which Mr. Dean wrote was lifted four years ago from Winkfield Gardens, it being one of a batch of seedlings of the old crimson *Clove* variety. The same season it flowered at Kingston-on-Thames. In all appearances, save that of colour, it exactly resembles the crimson variety, and the Warren House variety is totally different to the one described by Mr. Dean. *H. Hatcher, Winkfield, Windsor.*

—It is evident from the correspondence which has followed upon my first reference to the above-named *Carnation*, that what was hitherto regarded as a very fixed and reliable plant, viz., the old crimson *Clove*, was after all of a very sportive nature, for pink-flowered varieties appear to be fairly common; whether all are identical in shade of colour has to be proved. But the odd thing about these sports is that each person who finds one seems to jump at once to the conclusion that they alone have thus been favoured and that all other similar sports must have originated from their stock. If the crimson *Clove* has sported in one place why should it not do so in twenty places? Mr. Woodgate may be assured that the stock I referred to at Kingston Station did not find its way there from Kingston Hill. The true old *Clove* was brought to Kingston from Dorset, and did not sport until after several years had elapsed. I hope to procure plants later for trial at Wisley. *A. D.*

ACONITUM NAPELLUS, VAR. EMINENS.

The accompanying photograph of this beautiful *Aconite* was taken in Dr. Stapf's garden at Hanover House, Kew, about the end of the second week in August. The plant is figured in the *Botanical Magazine* for September, tab. 8,152 (see *Gardeners' Chronicle*, p. 202). Dr. Stapf states that it is by far the most handsome of the numerous varieties of *A. Napellus*, and that it appears to be confined to the limestone zone of the Eifel Mountains in Rhenish Prussia. He collected the tubers, from which the plant photographed was raised, on the banks of the River Kyll, some miles from Gerolstein, in 1904. There the plant grew most luxuriantly in rich, deep soil, close to the water, in company with Willows, the tallest specimen being about 6½ feet high. In another locality, on the slopes of a hill called Auburg, to the west of Gerolstein, he found it in almost impenetrable thickets of Hazel, *Cornus sanguinea*, *Viburnum Lantana*, and other shrubs. The tallest specimen in Dr. Stapf's garden in 1907 reached a height of more than 9 feet, an unusual size for an *Aconite*. *J. Hutchinson, Kew.* [We regret that the photograph is unsuitable for reproduction.—*Ed.*]

BRAVOA × POLIANTHES.—I enclose a photograph of a bigeneric hybrid, which, I think, is new. It is a cross between *Bravoa geminiflora* × *Polianthes tuberosa*. The cross was made in 1903, and six seeds resulted, which all germinated, and the seedlings are now fully-grown plants, but only one flowered this year. The hybrids seem nearly, if not quite, as hardy as the seed-parent, having passed the last two winters in a cold greenhouse, from which frost was barely excluded. This plant had a spike about 3 feet high (grown in a pot), with 25 flowers, which are fairly intermediate in colour, size, and form between the parents. The colour is a pale, coppery, or salmon-cream. In *Bravoa* the flowers hang down, and in the *Tuberosa* are semi-erect; in this hybrid they are (when fully out) horizontal. The bulb and roots showed signs of the cross and also the leaves, which are somewhat broader than those of *Bravoa*, but the two plants are very similar in these characters, and I have been surprised that they should have been placed in different genera. I suggest *Bravanthus* as a name for the hybrid. I hope all the six plants will flower next year, and I expect to see some differences in the flowers, as the leaves are different, some being broader and deeper green, and, in one case, much spotted at the base. I also enclose the top part of the spike of the hybrid with a spike of *Bravoa*

geminiflora for comparison. *A. J. B.* [We cannot see that the flowers differ in any way from typical *Bravoa geminiflora*. They have none of the characters of *Polianthes*. In *Polianthes* the ovary and fruit are half superior, the flower white, 1½ to 2 inches long, with large segments half as long as the funnel-shaped tube, and the anthers are scarcely exerted from the tube of the perianth. In the specimen received the ovary and fruit are quite inferior, the tube is nearly cylindrical, and the segments very small. In *Bravoa* the ripper flowers are erect.—*Ed.*]

CHERRY LAUREL TIMBER.—Rarely has the wood of the Common Laurel, *Cerasus laurocerasus*, been found of sufficient size to be used as timber, though not long since I recorded the sale of some 40 tons of this wood from an estate in the north of Ireland. Several of the stems which I measured were fully 12 inches in diameter at the root end, and the whole realised 55s. per ton, for use in the spinning mills at Belfast. This timber was grown on a reclaimed peat bog, from which peat for fuel had at one time been cut. Recently the Earl of Charlemont, when conducting me over his beautiful estates of Drumcarne, informed me that he also had sold a quantity of Laurel timber, but at about double the price above recorded. The timber is very heavy and durable. *A. D. Webster.*

ANTS ON A LAWN.—A fortnight ago we had quite a plague of ants on the lawn and they appeared to be destroying the grasses. I told my gardener to thoroughly soak the infested portions with water several times every day. The result has surprised me, for now there are no ants to be found. The applications of cold water cannot have killed them. I can only suppose that it made their quarters so uncomfortable that they moved somewhere else. *F. S., Sidmouth, September 14.*

PRESENT VALUE OF BRITISH TIMBER.—I am sorry my experience in South Hants does not agree with that of *A. D. W.* (see p. 193) as to the prices obtained for British grown timber. In this neighbourhood it pays much better to farm the land than to plant trees of any kind, as is proved by the many acres of woodland which have been grubbed of trees and prepared for farm cultivation. Many persons have of late suffered through the mistaken notions of writers as to the future value of timber, and notably Larch. With regard to the prices of various kinds of woods, quoted by *A. D. W.*, the most I can obtain for Oak is 1s. 6d. per foot for trees of 50 cubic feet. If I could furnish a quantity of crooked limbs, so valuable for yacht building, I could find for these a ready market. Beech timber realises here no higher price than 10d. per cubic foot for trees containing from 60 to 80 cubic feet. Elm will produce from 10d. up to 1s. per cubic foot for particularly good samples of large, clean growth. For Scotch Pine 4d. per foot is the average price obtained, and Poplar timber, of big size, realises no more. Even faggots, of a suitable size for heating ovens, can be readily bought for 8s. per 100. Thus, it will be seen, the returns for timber in this part offers no encouragement to the planter. *E. M., South Hants.*

HELIOTROPE "LORD ROBERTS."—This grand *Heliotrope* is equally useful for bedding purposes or for culture in pots. I have eight beds filled with it. The plants are not taller than 12 inches, and they have trusses of bloom which measure 10 inches across. The intense shade of colour is all that can be desired in a "dark" *Heliotrope*. *A. E. Y. R., Sudeley Castle.*

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 17.—The usual fortnightly meeting of the Committees was held in the Vincent Square Hall on Tuesday last. An excellent display was made with plants and flowers, amongst which the Dahlias, especially Cactus Dahlias, were a prominent feature.

Orchids were fairly numerous, but there were few novelties of outstanding merit, and the ORCHID COMMITTEE'S awards consisted only of one Botanical Certificate and two Awards of Merit.

The FLORAL COMMITTEE recommended a First-Class Certificate for the new species of *Viburnum* illustrated at fig. 95, and nine Awards of Merit to varieties of Dahlias and Montbretias.

The FRUIT AND VEGETABLE COMMITTEE did not make any award to a novelty.

At the afternoon meeting a lecture on "Sedges and Rushes for Ornamental Purposes," prepared by Mr. W. Smyth, was read by the Secretary.

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. H. B. May, Geo. Nicholson, Jas. Walker, Jno. Green, T. W. Turner, R. Hooper Pearson, J. F. McLeod, Jas. Douglas, W. Howe, C. Blick, J. T. Bennett-Poë, Walter T. Ware, R. W. Wallace, H. J. Cutbush, A. Turner, H. J. Jones, T. W. Barr, C. E. Pearson, E. H. Jenkins, W. J. James, George Paul, James Hudson, and E. T. Cook.

Lord SALISBURY, Hatfield House, Hatfield (gr. Mr. Prime), displayed a group consisting of more than 30 plants of the scarlet-flowered *Clerodendron fallax*. The plants exhibited good culture, and were carrying large inflorescences. (Silver Flora Medal.)

Messrs. HUGH LOW & CO., Bush Hill Park, Enfield, showed a batch of *Nephrolepis exaltata* var. *Whitmanii*, and another of the pink-flowered *Chironia exifera*, with a few vases of *Carnations* between the two groups.

Sir EDMUND LODER, Leonardslee, Horsham, Sussex (gr. Mr. W. A. Cook), showed inflorescences of *Hydrangea Hortensia* with blue flowers.

Messrs. WM. BULL & SONS, King's Road, Chelsea, exhibited showy ornamental-leaved plants of stove and greenhouse species as a setting to choice varieties of *Cattleyas* and other Orchids. (Bronze Flora Medal.)

Messrs. H. B. MAY & SONS, Upper Edmonton, exhibited plants of *Bouvardias* in variety, a number of small plants of greenhouse *Veronicas*, including several trained as standard specimens, with choice varieties of greenhouse Ferns, small Palms, *Ficus radicans*, &c. (Silver Banksian Medal.)

Messrs. JAMES VEITCH & SONS, King's Road, Chelsea, showed flowering sprays of *Streptocarpus* raised from seeds sown eight months since. There were 27 distinct shades of colouring and one of pure white amongst the seedlings, which represented an excellent strain of this useful greenhouse flowering plant. *Nerine Fothergilli* major was shown by Messrs. VEITCH in very large plants, some having 16 or 18 flower-spikes. *Sarracenia purpurea* and *Crocea latifolia* major were also noticed in this exhibit. As a separate group, Messrs. VEITCH showed hardy plants from their Coombe Wood Nursery, including the new *Viburnum rhytidophyllum*, ornamental fruited *Crabs* in fruit, remarkably well-fruited shrubs of *Hippophae rhamnoides*, many *Hypericums*, including the small-flowered *H. galioides*; *Sambucus canadensis*, a species with a huge inflorescence; *Aralia spinosa* in flower; *Nandina domestica*, a plant with handsome foliage; *Cydonia pygmaea*, and many others. (Silver Flora Medal.)

Messrs. W. & J. BROWN, Stamford, showed bunches of garden Roses, with plants of *Kochia scoparia* interspersed. (Silver Banksian Medal.)

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, showed hardy ornamental-foliage plants in small pots, with small plants of large flowering *Clematis* interspersed.

Messrs. W. CUTBUSH & SON, Highgate, London, N., staged an assortment of varieties of the Winter-flowering or American *Carnations*, with two large vases of *Lilium speciosum rubrum* at the back of the exhibit. (Silver Flora Medal.)

Messrs. W. WELLS & CO., Merstham, Surrey, exhibited vases of early flowering *Chrysanthemums* of the market type, and including *Nina Blick* (bronze); *Miss B. Miller* (yellow); *Goacher's Pride* (white); *Polly* (bronze), an incurved bloom; *Perle Chatillonnaise* (cream, faintly suffused with pink), &c. (Bronze Flora Medal.)

Messrs. R. WALLACE & CO., Kilnfield Gardens, Colchester, showed a collection of *Montbretias* of varieties raised by Mr. Geo. Davison, and including *Prometheus*, *Westwick*, *Ernest Davison*, *Lutetia*, *King Edmund*, and several new varieties which are described under Awards. Adjoining the *Montbretias* was an assortment of seasonable hardy flowers, including many spikes of *Gladioli*. (Silver-Gilt Banksian Medal.)

Mr. AMOS PERRY, Enfield Chase, London, N., showed seasonable hardy flowers in variety. We noticed flowering sprays of *Potentilla Hopwoodiana* with expanded flowers, that

are tinged with rose on a yellowish ground; the giant Rudbeckia, *R. maxima*; *Coreopsis verticillata* with yellow flowers that are like a miniature Sunflower; *Lilium auratum* in variety; Pentstemons of many shades of colours; *Stokesia cyanea*; *Chrysanthemum maximum*, and the charming dwarf *Tritoma Macowanii*, with rich, orange-scarlet flowers. (Silver Flora Medal.)

Mr. MAURICE PRICHARD, Christchurch, Hants, exhibited an assortment of hardy flowers. *Hemerocallis flava* "Dr. Regel" was very finely shown; also *Montbretias* in variety, *Kniphofias*,

CARTER, PAGE, & Co., London Wall, London. The exhibit extended along the entire end of the building opposite the clock, and was arranged in a very pleasing manner. The flowers were principally of the Cactus type, and almost all the best varieties were shown. At either end were stands of single and Pompon varieties. The whole was relieved with Grasses, small Palms, and sprays of *Ampelopsis*. As a separate exhibit, this firm displayed pot plants of *Clematis* in flower, and small specimens of *Ampelopsis Veitchii*, with autumnal colouring in the foliage. (Silver-Gilt Flora Medal.)

back of the exhibit were sprays of perennial Asters in variety. (Silver-Gilt Banksian Medal.)

Messrs. J. CHEAL & SONS, Crawley, exhibited Cactus, Pompon-Cactus, single, and Pompon-flowered Dahlias in many of the best varieties. (Silver Banksian Medal.)

Mr. CHAS. TURNER, Royal Nurseries, Slough, displayed a choice assortment of miniature Pompon-flowered Dahlias, and exhibition boxes of blooms of the larger show type. The Pompon Dahlias were of especial merit. (Silver Flora Medal.)

Messrs. HOBBIES, LTD., Dereham, Norfolk, set up a very extensive exhibit of Dahlias of the single Pæony-flowered type, with a row of Cactus varieties as an edging to the group. (Silver Banksian Medal.)

Mr. J. WALKER, Thame, Oxon., displayed show and Cactus-flowered Dahlias of high quality in a pretty setting of fancy baskets with Grasses and other suitable foils. At the back of the Dahlias were many excellent varieties of Anemone-flowered or quilled China Asters. (Silver-Gilt Banksian Medal.)

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, showed an assortment of Dahlias of most types interspersed amongst sprays of ornamental trees and shrubs. Amongst the last-named were fruiting sprays of *Cotoneaster frigida*, ornamental Crabs in variety, *Weigela versicolor*, Purple-leaved Peach, *Clerodendron trichotomum* in flower, ornamental-leaved Elder, *Ligustrum*, and many others.

Messrs. H. CANNELL & SONS, Swanley, Kent, made an extensive display with Cactus and Pæony-flowered Dahlias. Among these latter type notable varieties were *Souvenir de Gustave Douzon* (scarlet), *Mdlle. van den Dael* (soft pink), *Grand Duc Alexis* (white), *Papa Charmet* (dark crimson), and *Yellow Colosse*. The two last-named varieties are new. (Silver Flora Medal.)

AWARDS.

A FIRST-CLASS CERTIFICATE was awarded to

Viburnum rhytidophyllum.—This is a new Chinese species introduced by Messrs. James Veitch & Sons, and it is described in the *Hortus Veitchii* published by that firm. It is an excellent, hardy shrub, and its character may be seen from the illustration at fig. 95, in which the very large, much wrinkled leaves and immense corymbs of flowers are well portrayed. The plant exhibited by Messrs. Veitch on Tuesday last was in fruit, and it showed that the fruits set very freely. In colour they are first bright red, but afterwards become of deepest purple or black. (See *Gardeners' Chronicle*, June 30, 1906, p. 418.)

AWARDS OF MERIT were recommended to the plants enumerated below:—

Montbretia King Edmund.—A yellow flowered variety, apparently of very tall, vigorous habit, the inflorescences branching freely. The flowers are of large size, and they do not expand so fully as most varieties.

M. Lady Hamilton.—This variety appeared scarcely so tall. The flowers are an Apricot shade of yellow, and in form are greatly superior to the much larger blooms seen in *Prometheus*. They do not expand so fully even as those of the variety *King Edmund*, but have some resemblance in form to *Watsonias*.

M. Lord Nelson.—A most effective variety with orange-scarlet-coloured flowers, having yellow centre, the exterior of the segments being of dark crimson.

The three varieties of *Montbretias* were shown by Major PETRE, Norwich (gr. Mr. Davison), who also raised the variety *Prometheus*. They are excellent acquisitions to these desirable border plants.

All the following varieties of Dahlia are of the Cactus-flowered type:—

D. "Flame".—A very large flower of orange-red colour. Shown by Mr. H. SHOESMITH, Woking.

D. "Dorothy".—A pretty, light mauve-coloured flower with white centre. An attractive variety of good form.

D. Ivernina.—A very large flower of orange and pale-red tints.

D. Rev. A. Bridge.—This variety has yellow flowers with reddish tips to the florets.

D. C. E. Wilkins.—A pretty flower of salmon-rose shade with straw-coloured centre. The florets, being much rolled, appear extra narrow and they incurve well towards the centre.



FIG. 95.—*VIBURNUM RHYTIDOPHYLLUM*: AWARDED A FIRST-CLASS CERTIFICATE ON TUESDAY LAST WHEN SHOWN BY MESSRS. JAS. VEITCH AND SONS.

perennial Asters, Anemones, Phloxes, Liliums, &c. (Silver Flora Medal.)

Mr. FRANK BRAZIER, Caterham Hardy Plant Nurseries, exhibited hardy plants, such as perennial Asters, early-flowering Chrysanthemums, Gladioli, Roses, Antirrhinums, Phloxes, and many others. (Silver Banksian Medal.)

The exhibits of Dahlias were extensive, and many new varieties of this seasonable flower were presented for Awards. A large display of these flowers was shown by Messrs.

Mr. J. T. WEST, Tower Hill, Brentwood, displayed many beautiful varieties of Cactus and Pompon-flowered Dahlias, with suitable greenery. The blooms were of exceptionally high quality, and were displayed in an artistic manner. (Silver Banksian Medal.)

Messrs. T. S. WARE, LTD., Feltham, Middlesex, displayed a pretty exhibit of Cactus Dahlias, with several of the Pæony-flowered type intermixed. The best of these latter varieties is the scarlet *Souvenir de Gustave Douzon*. At the

The four varieties mentioned immediately above were shown by Messrs. J. STREDWICK & SON, St. Leonards.

D. Cynthia.—The shades of old gold and pale red are very attractive in this variety, and in addition the centre of the flower and the tips of the florets are yellow. Shown by Messrs. T. S. WARE, Ltd.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, H. Little, W. Boxall, R. G. Thwaites, A. A. McBean, H. T. Pitt, W. P. Bound, A. Dye, J. Charlesworth, W. H. Young, H. G. Alexander, W. H. White, H. A. Tracy, H. Ballantine, F. G. Hanbury, R. Brooman-White, W. Cobb, W. A. Bilney, and F. M. Ogilvie.

Messrs. CHARLESWORTH & Co., Heaton Bradford, staged a group in which home-raised hybrids, and introduced species were equally well represented. Amongst novelties staged were *Sophro-Cattleya* Marcus (*C. Enid* × *Sophro-Cattleya* Calypso), a pretty flower, with orange-ground colour, tinged with rose; the centre of the lip is a bright shade of yellow, the margin being flaked with rose; *Sophro-Lælia* Leda (*L. præstans* × *S.-L. Gratrix*), of bright rose-purple colour; and *Sophro-Cattleya* Antiochus (see Awards). The centre of the group was furnished with finely-flowered plants of *Vanda* Kimballiana, and a pleasing effect was made by a number of the handsome *Cattleya* Iris, and some pretty hybrid *Odontoglossums*, including *O. Phœbe* and *O. Othello*. Other showy-flowered hybrids noted were the very handsome *Cypripedium* Daisy Barclay, *Cattleya* Germania, *C. Fabia*, and *Brasso-Cattleya* Madame Chas. Maron. At one end of the exhibit was a selection of varieties of *Dendrobium* Phalænopsis, including *D. P. Rothschildianum*, a white form, with pink veining on the lip; and of curious species were the elegant *Bulbophyllum* hirtum, *Megacelinium* falcatum, *Cammaridium* ochroleucum, the rare white *Eria* stellata, &c. (Silver Flora Medal.)

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, staged a group of Orchids, in which many varieties of *Lælio-Cattleya* Blechleyensis and *L.-C. Haroldiana* were prominent features; all the flowers varied considerably in their colouring. In addition to these were good specimens of *L.-C. Hermione*, *L.-C. Welliana*, *L.-C. Tenos*, several forms of *Cattleya* Browniæ, and other showy hybrids. Of *Cypripediums* we noticed *C. James H. Veitch*, *C. H. Ballantine*, *C. Rothschildiano-superbiens*, *C. Numa* variety *nigra*, &c. (Silver Flora Medal.)

Major G. L. HOLFORD, C.I.E., C.V.O., Westnort (gr. Mr. H. G. Alexander), showed a selection of choice hybrids, including *Brasso-Cattleya* Pluto (*C. granulosa* × *B. Digbyana*), a very remarkable flower, with sea-green coloured sepals and petals, and a massive white lip bearing rose-coloured markings on the front; *Lælia amœna* (*pumila* × *anceps*), which showed much of the form of *L. anceps*; *Brasso-Lælio-Cattleya* Hippocrates (*L.-C. Hippolyta* × *B. Digbyana*), rosy-lilac in colour, with a greenish-yellow coloured disc; and *Cypripedium* Cynthia (*Charlesworthii* × *Chamberlainianum*).

Sir TREVOR LAWRENCE, Bart., Burford (gr. Mr. W. H. White), showed a finely-flowered specimen of the handsome *Cattleya* Hardyana marmorata, a variety having a pale-yellow ground colour that is freckled with rose; the lip is of a deep claret-crimson, with gold veining; *Lælio-Cattleya* Proserpine (*L. Dayana* × *C. velutina*); *Cattleya* Ashtonii superba, *Cynoches* peruvianum, *Cataseum* fimbriatum, and *C. callosum*.

Messrs. SANDER & SONS, St. Albans, staged a group composed principally of showy hybrid *Cattleyas* and *Lælio-Cattleyas*. *Cattleya* Pittiana rubra is a finely-coloured variety; *C. Castreana* (*Loddigesii* × *Hardyana*) had pretty lilac-tinted flowers and a broad, white labellum that possesses a yellow centre; *C. Iris inversa* was represented by several showy forms, all having a shorter isthmus in the lip than in the plant raised from the original cross. Of the *Lælio-Cattleyas*, the finest was *L.-C. Blechleyensis* "Illuminator" (F.C.C., July 21, 1903), with bronzy, rose-tinted sepals and petals, and a glowing claret-crimson coloured lip. Good forms of *Cypripedium* Godefroyæ leucochilum and others were also shown in this group. (Flora Medal.)

Messrs. MOORE, LTD., Rawdon, Leeds, staged a group including good forms of *Cattleya* Iris, *Odontoglossum* Wilckeanum, &c. The species included a specimen of the light-blue *Vanda cœrulea*, *Cœlogyne* ocellata, *C. corrugata*, *Lycaste* xtyriophora with several flowers, a pretty spotted form of *Odontoglossum* crispum, and several other *Odontoglossums*; *Oncidium* crispum aureum, with very beautiful yellow flowers, the brown markings being faintly indicated, and a very fine and distinctly marked variety of *Vanda* suavis. (Silver Flora Medal.)

Messrs. ARMSTRONG & BROWN, Tunbridge Wells, exhibited a pleasing group of Orchids, the centre of the exhibit being composed of about fifty plants of *Cattleya* Iris (*bicolor* × *aurea*) from the parents crossed both ways. The variety *inversa*, the seed-bearing plant of which was *C. aurea*, has round flowers with short isthmus to the lip. The flowers of this showy and useful *Cattleya* vary remarkably in colour, but the crimson, purple or rose-coloured labellums are always bright. *C. Armstrongiæ* (*Loddigesii* violacea × *Hardyana*) is also a pretty variety and lasts for a long period in flower, thus proving valuable as a decorative plant. Several forms of *C. Armstrongiæ* were shown. Also a good selection of *Dendrobium* Phalænopsis, a number of hybrid *Cypripediums*, including *C. Kimballianum*, *C. Milo*, "Cobb's variety," and the richly-coloured *C. Fowlerianum*; a selection of *Odontoglossum* crispum; the curious *Bulbophyllum* Godseffianum, &c. (Silver Flora Medal.)

Messrs. WILLIAM BULL & SONS, King's Road, Chelsea, in the centre of their group arranged a selection of hybrid Orchids in a setting of showy foliage plants. Among the Orchids were forms derived from *Cattleya* aurea × *C. granulosa* Schofieldiana, *L.-C. elegans* × *C. Warscewiczii*, &c.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), displayed *Cattleyas* Mr. Frederick Knollys (*granulosa* Buyssonian × *Bowringiana*)—a very distinct and pretty flower with purple sepals and petals. The lip has a white tube that is slightly tinged with rose, the rounded front lobe is coloured violet-purple, and has darker lines on a sulphur-yellow ground in the centre; and *C. Adula* "Mrs. Francis Wellesley" (*bicolor* × *Hardyana*), a pleasing flower, the sepals of which are greenish-buff, tinged with rose, the petals bronzy in the middle, the blades tinged and veined with rose. The lip has the short bluish-white side lobes closed over the thick white column, the front being coloured ruby-purple with orange markings on the isthmus.

F. MENTEITH OGILVIE, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), sent *Lælio-Cattleya* W. Balmforth (*C. Warneri* × *L.-C. Callistoglossa*), a variety resembling a very large-flowered form of *C. Warneri*, and the pretty *Sophro-Lælia* Gratrixiæ magnifica. (See Awards.)

Mr. PERCY B. AWCOCK, Leatherhead, showed a plant of *Odontoglossum* grande carrying seven flowers on one spike.

Monsieur MERTENS, Mont St. Amand, Ghent, showed two specimens of *Miltonia* vexillaria Leopoldii, other varieties of *Miltonia* vexillaria and two hybrid *Odontoglossums*.

AWARDS.

AWARDS OF MERIT.

Sophro-Lælia Gratrixiæ magnifica (*Sophronitis grandiflora* × *Lælia tenebrosa*).—A pretty dwarf hybrid with neat flowers, having a great resemblance to a small but broad-leaved *L. tenebrosa*, and certainly one of the best results yet obtained from using that species as a parent. The plant had four flowers and one flower-bud. The sepals and petals are a pale reddish-buff, with a darker red veining. The lip is a pale shade of rose, and is heavily marked with purplish red. From F. MENTEITH OGILVIE, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth).

Sophro-Cattleya "Antiochus" (*C. Warscewiczii* × *S.-C. Cleopatra*).—A pretty and dwarf hybrid with comparatively large flowers thus indicating the influence of both parents. The sepals and petals are coloured a bright purplish-rose, with a yellowish ground colour; the disc of the lip is a chrome yellow, the tips of the side lobes and the crimped-edged front being coloured ruby-crimson. From Messrs. CHARLESWORTH & Co., Bradford.

BOTANICAL CERTIFICATE.

Epidendrum campylostalex.—A singular species with glaucous green pseudo-bulbs and leaves, and decurved spikes of yellowish flowers that are tinged with chocolate colour, the lip being whitish. From Sir TREVOR LAWRENCE, Bart. (gr. Mr. W. H. White.)

Fruit and Vegetable Committee.

Present.—A. H. Pearson (in the chair), and Messrs. Jos. Cheal, H. Markham, Alex. Dean, Geo. Kelf, A. R. Allan, R. Lye, W. Fyfe, W. Pope, H. Parr, J. Davis, John Lyne, P. D. Tucker, J. Jacques, J. Willard, J. McIndoe, Chas. Foster, W. H. Divers, and W. Poupert.

The UNIVERSITY COLLEGE, Reading (garden superintendent, Mr. C. Foster) exhibited a very large and meritorious display of fruits, including Apples, Pears, Plums, Cherries, Tomatos, and Melons. Among the Apples were good specimens of the varieties Allington Pippin, Bismarck, James Grieve, Warner's King, Peasgood Nonsuch, Ribston Pippin, Blenheim Pippin, and Lady Sudeley. The Pears included good samples of Durondeau, Williams' Bon Chrétien, and Conference. Of Plums we noticed choice fruits of Monarch and Magnum Bonum. (Silver-Gilt Banksian Medal.)

Messrs. S. SPOONER & SONS, Hounslow Nurseries, Hounslow, staged a collection of hardy fruits—Apples, Pears, Plums, and fruits of a species of *Rubus*, known as Strawberry × Raspberry. Lady Sudeley Apple was finely coloured. A basket of very good fruits of Potts' Seedling Apple was also noticed. Duchess of Gloucester, Cardinal, and Bismarck were other good dishes of Apples shown in this display. (Silver Knightian Medal.)

Mr. L. LOCKWOOD, Low Hill, Lindley, Huddersfield, showed 13 varieties of culinary Peas. The largest pods were those of the variety Quite Content; Centenary is also a large-podded variety with very deep sutures that causes the pods to be very broad; Edwin Beckett is a fine type of pod. Sharp's Standard, Distinction, Masterpiece, Gradus, Prince Edward, Duke of Albany, The Belle, and Alderman are all of first-class quality. The pods were beautifully green, and their contents in the best edible condition. (Silver Banksian Medal.)

A collection of some lesser known varieties of Apples was exhibited from the Society's gardens at Wisley. The fruits were not quite at their best season; the most notable kinds were Mrs. Barron, Chas. Ross, Frogmore Prolific, The Queen, Fraise d'Hoffinger, Queen Caroline, and Verder's Golden Reinette.

A new highly-coloured Apple named Red Victoria was shown by Mr. G. W. MILLER, Clarkson Nurseries, Wisbech. The variety would be welcomed by those persons who prefer an Apple with a very acid flavour.

Sir E. G. LODER, Leonardslee, Horsham, Sussex (gr. Mr. W. A. Cook) showed a box of well-cultivated Pears of the Williams' Bon Chrétien variety, and another of Worcester Pearmain Apple.

Mr. S. MORTIMER, Rowledge, Farnham, Surrey, showed several fruits of his new Cucumber "Market Rival," a variety raised from Bounteous × Rochford's Market.

ROYAL CALEDONIAN HORTICULTURAL.

The following awards were granted to non-competitive exhibits at the society's recent show, a report of which was published in our last issue:—

Large Gold Medal to Messrs. Storrie & Storrie, Dundee.

Gold Medals to Messrs. Sutton & Sons, Reading, and to Messrs. Dobbie & Co., Rothsay.

Silver-Gilt Medals to Messrs. Blackmore & Langdon, Bath; Robert Bolton, Warton, Carnforth; Cunningham, Fraser & Co., Edinburgh; John Downie, Edinburgh; John Forbes, Hawick; Methven & Son, Edinburgh; Laird & Sons, Ltd., Edinburgh.

Silver Medals to Messrs. J. Cocker & Sons, Aberdeen; Dickson & Son, Edinburgh; T. S. Ware, Ltd., Feltham, Middlesex; Thos. Darlington, Warton, Carnforth; Henry Eckford, Wem; Gunn & Sons, Olton, Birmingham; A. Lister & Son, Rothsay.

Bronze Medals to Messrs. M. Campbell & Son, High Blantyre; D. McOmish, Crieff; W. Wells & Co., Mersham, Surrey.

LONDON DAHLIA UNION.

SEPTEMBER 12, 13.—The annual exhibition of this society was held on the foregoing dates in the Royal Botanic Gardens, Regent's Park. The show was a decided success, and ranked amongst the best held under this society's auspices. Competition in the various classes was keen, and the competitors included most of the leading firms and amateurs who make a speciality of this flower.

OPEN CLASSES.

SHOW DAHLIAS.—The best twenty-four blooms of show Dahlias were shown by Mr. J. WALKER, Thame, Oxon, in competition with three other exhibitors. He was followed by Mr. CHAS. TURNER, Royal Nurseries, Slough; Messrs. KEYNES, WILLIAMS & Co., Salisbury, being placed 3rd. The flowers in the premier exhibit included Plutarch, Roy Seale, William Rawlings, Golden Gem, Wm. Keith, Mrs. W. Slack, John Nicholson, Chieftain, The Reverend, T. W. Girdlestone, Florence Tranter, Arthur Rawlings, Comte de la Saux, James Cocker, John Walker, Virginale, &c.

Messrs. JOSEPH CHEAL & SONS, Crawley, won the 1st prize for 24 blooms of Show Dahlias with excellent flowers of very rich colouring. Especially fine were the varieties T. W. Girdlestone, Mrs. Saunders, William Rawlings, and Warrior. 2nd, Mr. J. R. TRANTER, Henley-on-Thames. Four exhibitors contested in this class.

CACTUS DAHLIAS.—The class for 12 varieties of this type, shown in bunches of six blooms of each variety, attracted six exhibitors, and proved a good competition. The best display was put up by Messrs. STREDWICK & SON, Silverhill Park, St. Leonards-on-Sea, who showed Ivernia, Etruria, Dr. G. G. Gray, Miss Hills, Dorothy, Rev. A. Bridge, Uranus, Alfred Dyer, William Marshall, &c. 2nd, Mr. H. SHOESMITH, Woking, Surrey, with Flame, a new scarlet-coloured variety, C. H. Curtis, Daisy Staples, H. Shoesmith, &c. 3rd, Mr. WALKER.

A class was provided for 24 blooms of Cactus Dahlias, to be shown on exhibition boards. Messrs. STREDWICK & SON were again to the fore, surpassing three other exhibitors, the second best collection being shown by Messrs. J. BURRELL & Co., Cambridge. Messrs. STREDWICK showed high-class flowers of such beautiful varieties as Wm. Marshall, Mrs. F. Grinstead, Lustre, Recam, Dr. G. G. Gray, Harold Peerman, Dorothy, C. E. Wilkins, &c.

Mr. S. MORTIMER, Rowledge, Farnham, Surrey, won the 1st prize for 12 blooms of Cactus Dahlias, shown on boards, with the varieties Crepuscule, H. W. Sillem, Clincher, Thos. Parker, T. A. Haveymeyer, Hyacinth, Mont Blanc, Mrs. Grinstead, Mrs. G. Stevenson, The Pilot, Referee, and J. B. Riding. 2nd, Mr. M. V. Seale, Sevenoaks. Four groups were staged in this class.

The best three vases of Cactus Dahlias, each vase containing nine blooms, were shown by Mr. JOHN WALKER, amongst five competitors. His blooms were of fine quality, and they were relieved with sprays of grasses, ornamental foliage, berried shoots, &c. The varieties were Mont Blanc, Clincher (pink), and Conrad (scarlet). 2nd, Mr. SEALE.

POMPON DAHLIAS.—The class for 12 varieties of these miniature flowers attracted six competitors. Generally the exhibits were of high quality, but the choicer flowers were shown by Mr. C. TURNER, Slough, his examples being very small in size, of best form, and rich in colouring. He showed Bacchus, Mary, Darkest of All, Phyllis, Marietta, Thora, Cyril, Hecla, Montague, San Toy, Mercia, &c. 2nd, Mr. WALKER, Thame.

SINGLE DAHLIAS.—The best 12 varieties of these flowers, in bunches of six blooms, were shown by Messrs. J. CHEAL & SONS. The 1st prize group included the varieties Hector, Snowdrop, Columbine, Princess of Wales, Victoria, Kitty, Fuji San, Stromboli, Eclipse, Rosebank, Scarlet and Leslie Seale. 2nd, Rev. S. S. PEARCE, Coombe Vicarage, Woodstock, Oxon., with Mikado, Leslie Seale, Snowdrop, Columbine, Miss Moreland, Tommy, Darkness, &c.

AMATEURS' CLASSES.

The displays from amateur growers were very numerous, and most of the classes in this section were well contested. The "Hobbies" Challenge Cup, offered for nine varieties of Cactus Dahlias in bunches of three blooms, was won by Mr. W.

STEPHENS, Isleworth, Middlesex, last year's winner, Mr. W. E. PETERS, being 2nd on this occasion.

A very fine stand of blooms was shown by Mr. S. COOPER, The Hamlet, Chippenham, in the class for four varieties of Cactus Dahlias, and with which he secured the 1st prize. The varieties were Pearl, J. B. Riding, J. H. Jackson, and Mrs. Macmillan. Mr. STEPHENS was 2nd in this class, and he was 1st for 12 blooms of Cactus Dahlias shown on boards in competition with seven other exhibitors.

Mr. G. DAVIDSON, Thornton Heath, was 1st for Pompon Dahlias, and the Rev. PEARCE exhibited the best stand of single Dahlias.

AWARDS.

First-class Certificates were awarded to the following varieties:—Hildegard (Pompon), shown by Mr. TURNER, Slough; Peggy (single), Brilliant (single), both shown by Messrs. J. CHEAL & SONS, Crawley; Mrs. Walker Baxter (Cactus), shown by Mr. J. T. WEST, Brentwood; Flame (Cactus), shown by Mr. H. SHOESMITH, Woking; Mercury (Cactus), C. E. Wilkins (Cactus), and Rev. A. Bridge (Cactus), the last three varieties shown by Messrs. J. STREDWICK & SONS, St. Leonards.

Dean Memorial Medals. The winner of this medal in the amateur classes was Mr. F. H. COOPER, Chippenham, for his exhibit of 12 blooms of show Dahlias in Class 22.

Mr. JOHN WALKER, Thame, Oxon., was awarded a similar medal in the nurserymen's classes for his exhibit of 24 blooms of show Dahlias.

NON-COMPETITIVE EXHIBITS.

These were numerous, and generally of very high merit, not the least pleasing feature being their attractive manner of staging. Mr. L. L. GWILLIM, New Eltham, Kent, showed flowers of tuberous-rooting Begonias. (Gold Medal.) Messrs. T. S. WARE, LTD., Feltham, showed an excellent exhibit of Dahlias. (Large Gold Medal.) HOBBS, LTD., Dereham Nurseries, Norfolk, showed Dahlias, including flowers of the Pæony-flowered type; and an assortment of Roses. (Large Gold Medal.) Messrs. SPOONER & SONS, Hounslow, showed hardy fruit, including Apples, Pears, Plums, &c. (Silver-Gilt Medal.) Mr. J. T. WEST, Brentwood, showed an assortment of Dahlias of most types. (Large Gold Medal.) Messrs. J. BURRELL & Co., Cambridge, showed Gladioli and seasonal hardy flowers. (Gold Medal.) Messrs. J. S. GROVES & SON, Ham, Surrey, exhibited improved varieties of Chrysanthemum maximum. (Silver-Gilt Medal.) Mr. W. STEPHENS, Isleworth, displayed Dahlias in variety. (Silver-Gilt Medal.) Mr. SAGE, Richmond, showed floral designs and horticultural sundries. (Silver Medal.) Mr. WILLIAMS, Ealing, exhibited flower displays, &c. (Silver Medal.)

BRITISH GARDENERS' ASSOCIATION.

SEPTEMBER 12.—A conference on the subject of "Examinations for Gardeners" was held under the auspices of the above association on this date. The meeting was held in the Museum of the Royal Botanic Society, Regent's Park, under the presidency of Mr. Geo. Gordon, V.M.H. The proceedings were opened by Mr. Chas. Foster, of University College Gardens, Reading, who claimed that the benefits to be derived from the study necessary to enable a person to compete in a public examination were beneficial. By becoming conversant with the proper method of answering questions set at an examination, a correct style is cultivated, which enables one to write a clear and intelligent application when answering an advertisement for a situation. A badly written letter is often a deterrent in obtaining a new post, and an illiterate person is passed over for one of better education. The many opportunities open to young gardeners in the form of debating societies, technical institutions, good literature, and the like, should be taken advantage of, for increased knowledge enables a gardener to better explain questions on gardening when such are asked by his employer, and if a gardener can interest his employer he has accomplished much. A gardener should seek to elevate himself, and one means to this end is the acquirement of increased knowledge. Mr. Foster warned his hearers not to allow their search for theoretical knowledge to be pursued at the expense of practical gardening.

Mr. Hawes agreed with the first speaker in the need for examinations for young gardeners. A gardener should be able to express himself clearly on any subject connected with his work, and although there were many excellent gardeners who were illiterate, the best positions in the future would go to those men who combined their practice with the ability to express themselves intelligently, if need be, on paper. Speaking later on the subject of selection of examiners, Mr. Hawes advocated examinations that were partly practical, partly oral, and partly written. The examiners should consist of men who hold an impartial position in the horticultural world. On no account should a botanist be employed to examine a gardener. Examinations in gardening should be confined to gardeners. At the present time examinations in horticulture are open to any person who may read up the subject, and pass high on the list even though he or she may possess no knowledge whatever of the practice of gardening.

Mr. Geo. Gordon (chairman) stated that although there are many good gardeners who cannot even read or write, it has become necessary in these days of liberal education to be able to express oneself intelligently on paper. He deplored the fact that there were so many persons who could not write legibly, and he considered there had been no advance in recent years in the art of writing. In Scotland, good penmanship was a general rule, and he believed one reason why Scotch gardeners were so successful in obtaining good situations in gardening, was that they were able to express themselves intelligently when applying for the post.

Several other speakers contributed to the debate.

NATIONAL CHRYSANTHEMUM.

SEPTEMBER 16.—The Executive Committee of this society held a meeting at Carr's Restaurant, Strand, on the above date. Mr. E. F. Hawes presided. A letter was read from Messrs. Webb & Son offering prizes for vegetables which were accepted for the 1908 show. The Bush Hill Park, Marlipool and Langley, Lancaster and District, and the Reigate and District societies were admitted in affiliation. Finance occupied some attention, and a Dinner Committee was appointed to carry out the details as to the time and place for holding the annual dinner. Seventeen new members and two fellows were elected.

The Floral Committee met on Monday, Sept. 16, when First-Class Certificates were awarded to the following varieties:—

C. J. J. Hart, an early flowering decorative variety. Flowers bright yellow with pale reverse, very full, but the florets are rather short.

C. Carmelite, an early flowering border variety of deep yellow colour. The flowers are somewhat small. The plant is dwarf and of free flowering habit.

C. Wells' Scarlet, a decorative variety of a shade of bright chestnut with crimson shading, and bronze reverse. The flowers are of medium size. These varieties were exhibited by Messrs. WELLS & Co., Merstham.

ORSETT & DISTRICT AGRICULTURAL AND HORTICULTURAL.

SEPTEMBER 5.—The 13th annual show of the above society was held on this date in the park of Orsett Hall, by permission of the president, F. H. D. C. Whitmore, Esq. The grounds of the residence were also open for the inspection of visitors to the show. Two large marquees were filled with horticultural produce.

Mr. C. Butcher (gr. to E. J. GOLDSMITH, Esq., Grays), was a successful exhibitor. He won the 1st prize for three exotic Ferns with well-grown, healthy plants, including a nice plant of *Dicksonia antarctica*; the 1st prize for four stove and greenhouse plants, for two plants of *Fuchsias*, for two pot-plants of *Liliums*, and for 12 spikes of *Gladioli*. The same exhibitor won 2nd prizes in several classes.

Mr. W. BEARD, Chadwell St. Mary, had the best four specimens of tuberous-rooting *Begonias*. Mr. G. HILLS, West Tilbury, won in the class for stove plants; 2nd, Mr. E. Neighbour (gr. to F. H. D. C. WHITMORE, Esq.).

In the classes for fruit, Mr. C. BUTCHER won the 1st prize for three varieties of indoor fruits with good examples of Black Hamburg Grapes, a Melon, and Nectarines; 2nd, Mr. T. RIDGWELL, Orsett.

Mr. W. SUTTON, Orsett, had the best eight dishes of hardy fruits; 2nd, Mr. RIDGWELL.

In the class for four dishes, Mr. H. CONINGSBY, Stanford-le-Hope, was easily 1st.

Mr. W. GRAY won the 1st prize in a class for two bunches of Grapes, with medium-sized, compact bunches of the variety Black Hamburgh.

Apples were well shown. Mr. SURTON was awarded the 1st prize for a dish of 12 Apples.

In the classes devoted to cut flowers, Mr. J. BRITTON was 1st for 8 bunches of hardy flowers shown in vases; 1st for 12 blooms of Dahlias; and for 12 blooms of Cactus Dahlias.

Vegetables were well represented, the most noteworthy exhibit being Mr. C. BUTCHER'S 1st prize collection of nine kinds. H. W. W.

ABERDARE HORTICULTURAL.

AUGUST 29.—This society held its annual show in Abernart Park, Aberdare, on this date. The exhibition was one of the largest and most successful the society has held, and an extra tent was required to accommodate the exhibits. The quality of the display generally was of high merit, and good competition was seen. Non-competitive exhibits were numerous and of much excellence. Messrs. CASE BROTHERS, Cardiff, contributed a display of floral designs, for which a Gold Medal was awarded. Mr. WILLIAM TRESEDER, Cardiff, arranged an exhibit, which included a fine collection of show and Cactus Dahlias. Another beautiful exhibit, consisting of a large group of miscellaneous flowering and ornamental-leaved plants, was arranged by Mr. Farmer, gardener to the Marquis of BUTE, Cardiff Castle.

Groups of plants.—The chief class for plants was that for a collection of miscellaneous subjects, arranged for effect in a space measuring 80 square feet. Three exhibitors competed, and of these Mr. E. Jackman, gardener to W. F. PARRY DE WINTON, Esq., Aberdare, was awarded the 1st prize for a tastefully arranged group, composed chiefly of Campanulas, Impatiens, Begonias, Achimenes, Gloxinias, Orchids, &c., intermixed with suitable ornamental-leaved subjects. 2nd, G. C. JAMES, Esq., Gwaelody Garth, Merthyr Tydvil, with a similar, though somewhat crowded, arrangement. The best four ornamental foliage plants were shown by F. W. MANDER, Esq., Glanynys, Aberdare, in *Phoenix rupicola*, *Lantania borbonica*, *Codiaeum* (*Croton*), *Queen Victoria*, and *Pandanus Veitchii*. This gentleman showed the best stove and greenhouse plants in blossom, being closely followed in this class by M. W. AMESBURY, Esq. The class for six stove and greenhouse Ferns made a good competition. Mr. S. Lawrence, gardener to W. J. REES, Esq., Mayesflynnon, Aberdare, was placed 1st. He showed *Adiantum sanctæ Catherinæ*, *A. concinnum latum*, *Davallia Mooreana*, *Nephrolepis Piersonii*, *N. exaltata*, and *Phlebodium aureum*. 2nd, Mr. AMESBURY.

Cut flowers.—Mr. STEPHEN TRESEDER, nurseryman, Cardiff, was the only exhibitor of 12 varieties of Tea or Noisette Roses, and he secured the 1st prize with a splendid set of fresh blooms, including the varieties Muriel Grahame, White Maman Cochet, Lady Roberts, Hon. Edith Gifford, Innocente Pirola, Mrs. S. Treseder, and Catherine Mermet. Mr. TRESEDER staged the only exhibit of 12 Hybrid Perpetual and Hybrid-Tea Roses, three blooms of each. He showed good blooms of Duchess of Portland, Countess of Caledon, Caroline Testout, Hugh Dickson, &c.

There was strong competition in a class for 12 vases of Sweet Peas. Mr. Jackman, gardener to W. F. PARRY DE WINTON, Esq., won the 1st prize with a fine set of fresh blooms. 2nd, Mr. Greening, gardener to the Rev. W. WILLETT. In a similar class for which Mr. H. Eckford, Wem, offered prizes, Mr. JACKMAN was again 1st.

Mr. GREENING had the best 12 blooms of Dahlias of Cactus varieties. 2nd, Mrs. REES, Glandare.

T. W. THOMAS, Esq., won in the class for Carnations. 2nd, Mr. GREENING.

Fruit.—Mr. Thomas, gardener to the Marquis of BUTE, Abernart, was placed 1st for six dishes of fruits, with good bunches of Madresfield Court and Foster's Seedling Grapes, Stirling Castle Peaches, Lord Napier Nectarines, Pears, and Victoria Plums. 2nd, Mr. MUSCOTT.

Mr. Curtis, gardener to T. G. CARTWRIGHT, Esq., Fairwater, Llandaff, showed the finest

white Grapes in the variety Mrs. Pearson, having bunches of unusually good quality; and the same exhibitor won in the class for two bunches of black Grapes with good, medium-sized bunches of Madresfield Court.

Mr. CURTIS was 1st both for dessert and culinary Plums, and he was closely followed in each class by Mr. THOMAS.

Vegetables.—A class was provided for a collection of nine dishes. Mr. THOMAS excelled in this class with choice Cauliflowers, Onions, Tomatos, Potatos, Carrots, Celery, Leeks, Peas, and Runner Beans. 2nd, Mr. MUSCOTT.

In the class for a collection of Potatos, Mr. JENKIN MORGAN, Margam, was awarded the 1st prize for a splendidly-grown selection of leading varieties. 2nd, Mr. H. COATE, Keinton Mandeville, Somerset.

TRADE NOTICE.

MESSRS. H. B. MAY & SONS.

We are informed that Messrs. H. B. MAY & SONS, Dyson's Road Nurseries, Upper Edmonton, have purchased the goodwill and a large part of the stock of the well-known Fern growers, W. & J. BIKENHEAD, of Sale, near Manchester. Messrs. MAY & SONS have greatly increased their stock of British and exotic Ferns in recent years.

GARDENING APPOINTMENTS.

Correspondents are requested to write the names of persons and places as legibly as possible. No charge is made for these appointments, but if a small contribution is sent, to be placed in a collecting box for the Gardeners' Orphan Fund, it will be thankfully received and acknowledged in these columns.

Mr. A. CLARKE, as Gardener to C. BILLARD LEAKE, Esq., Harefield Park, Uxbridge, Middlesex.

Mr. C. F. MOWAT, for many years Gardener to the late Mrs. CHARLES EDWARDS, Dolserau Hall, Dolgelly, N. Wales, as Gardener to Sir FRANCIS WINNINGTON, Bart., Stamford Court, Worcester.

Mr. G. BREINE, for the past 3 years Foreman in the Pleasure Grounds at Bear Wood, Wokingham, as Gardener to MORGAN S. WILLIAMS, Esq., St. Donat's Castle, Lantwit, Lantwit Major, Glamorgan.

Mr. W. E. WRIGHT, for the past 12 months in the Gardens at Llanharan House, South Wales, as Gardener to Captain WALTERS, R.N., Caer Llan, nr. Monmouth. (Many thanks for the donation to R.G.O.F.)

Mr. H. WHEELER, recently Gardener to the Marquis of WINCHESTER, Ampert, St. Mary's, Andover, as Gardener to Mrs. JENNER, Wenvoe Castle, near Cardiff, Glamorganshire.

Mr. G. FERGUSON, for the past 2 years employed in the Royal Horticultural Society's gardens at Wisley, and previously five years General Foreman at Tynley Hall, Winchfield, Hants., as Gardener to Sir RICHARD BROOKE, Bart., of Norton Priory, Runcorn, Cheshire.

Owing to the death of Mrs. DENTON, "Red Oaks," Henfield, Sussex, Mr. STEPHEN SOLLY is leaving that place, after 17 years' service, to take up the position of Gardener to H. CLARKE-JERVOISE, Esq., J.P., Chelwood Beacon, Uckfield, Sussex.

Mr. E. SLAVIN, previously Inside Foreman at Hawarden Castle and Sudbury Hall, and General Foreman at Glenstal Castle, Limerick, and Carrigoran, Newmarket-on-Fergus, Co. Clare, as Gardener to Lady MACRICE FITZGERALD, Johnstown Castle, Wexford.

Mr. C. J. NORRIS, late Gardener to the Lady MARY HERBERT, Syche, Market Drayton, as Gardener to Sir LEES KNOWLES, Bart., Westwood, Pendlebury, Manchester.

Mr. D. F. DEBNAM, as Gardener to H. G. GRAZEBROOK, Esq., of Thetford, near Banbury, Oxford.

Mr. A. DURIDGE, formerly Gardener to Sir BAMPFIDE FULLER, The Hermitage, Wyke, Winchester, as Gardener to C. H. SHORT, Esq., Greenwoods, South View, Tickenham, Clevedon, Somerset.

Mr. J. H. HERDMAN, previously in charge of the Orchid department at Coudon Court, Coventry, and previously Foreman at Scampston Hall, Yorks, as Gardener and Orchid Grower to G. SHORLAND BALL, Esq., Under Fell, Burton, Westmoreland.

Mr. CHARLES HINES, previously Foreman at Wood Sea, Virginia Water, Surrey, as Gardener to Captain ROYCE TOMKIN, Little Haugh, Norton, Bury St. Edmunds, Suffolk.

Mr. ROBERT WATSON, of Messrs. JAMES DICKSON & SONS, Inverleith Nurseries, Edinburgh, and formerly Foreman in the gardens of Lord HAMILTON, of Dalzell, Motherwell, as Gardener to Lady VICTORIA ROWE, Thorncroft, Guildford, Surrey.

Mr. W. STABLER, for the past 4 years Foreman at Matten Hall, Coudon-on-Tyne, Northumberland, as Gardener to S. H. FRASER, Esq., Whinney House, Low Fell, County Durham.

Mr. T. J. VEAL, late of the Royal Gardens, Kew, as Gardener to W. H. PERKIN, Esq., Hillsborough, Yelverton, Devon.

Mr. J. E. ARNOLD, for the past 15 months Foreman in the gardens at Draycot Park, Chippenham, as Gardener to Colonel HORNSBY-DRAKE, Compton House, Calne, Wilts.

Mr. WILLIAM LEITH, late Foreman at Downside Gardens, Leatherhead, as Gardener to Captain HILL, Westwood, Colchester.

Mr. M. FIELD, as Gardener to Mrs. THOMAS, Thames Bank, Whitchurch, Oxfordshire.

Mr. W. E. JONES, for the past 6 years Gardener to J. AMERY PARKES, Esq., White Lodge, Castlebar Park, Ealing, as Gardener to ALFRED A. THORN, Esq., Harebury, Leighton Buzzard.

Obituary.

ROBERT BAKER.—We regret to learn of the death of Mr. Robert Baker, of East Finchley, for nearly 40 years the representative of Messrs. Wm. Cutbush & Son, of the Highgate and Barnet Nurseries, and who passed away on Monday, the 16th inst., after a brief illness due to cancer. Mr. Baker, who had charge of the furnishing and indoor plant departments at the Highgate Nurseries, was for many years a familiar figure at the leading horticultural exhibitions throughout the country, and his genial disposition and striking personality commanded respect in the gardening world. Deceased leaves a widow and family.

LEON DUVAL.—The death of this well-known nurseryman, at Versailles, near Paris, is announced in the French papers. Many of the English visitors to the Paris and Ghent shows will remember what excellent specimens of Anthuriums, Orchids, and other species



THE LATE LEON DUVAL.

of plants were contributed by the firm of Duval. Deceased, who was sixty-three years of age, was vice-president of the French National Horticultural Society, the Horticultural Society of Seine-et-Oise, and the French Chrysanthemum Society.

STEPHEN WALKER.—Dahlia growers will learn with regret of the comparatively sudden death of this well-known cultivator and exhibitor of Dahlias, early on Tuesday morning last, at the age of 59 years. Accustomed to send Dahlias freely during the season to the meetings of the Royal Horticultural Society and other exhibitions, a load of flowers was despatched from Thame to Vincent Square on Monday last. At that time Mr. Walker was unwell, and it was assumed that the pain experienced was due to an attack of indigestion, but on Tuesday morning he passed away, unexpectedly, from heart failure. So recently as Thursday of last week Mr. Walker was at the show of the London Dahlia Union in Regent's Park, and was as bright and cheery as usual. The deceased was of robust build, had a kindly disposition and was greatly esteemed by all who were acquainted with him. Whilst the business at Thame still remains in the name of the late Mr. J. Walker, who founded the business about sixty years ago, Mr. Stephen Walker, the eldest son, had, in conjunction with his aged mother, the control of the nursery. The family of the deceased comprise his widow, and three sons and one daughter. Deceased's eldest son, Mr. Herbert Walker, has taken an active part in the business for some time past.

CATALOGUES RECEIVED.

BULBS.

MORLEY & Co., 152, Finchley Road, London, N.W.
 GEORGE COOLING & SONS, Bath.
 YATES & SONS, High Street, Cheltenham.
 DOBIE & MASON, 22, Oak Street, Manchester.
 THOS. S. WARE, LTD., Feltham, Middlesex.
 HOGG & ROBERTSON, LTD., 22, Mary Street, Dublin.
 SMITH & SIMONS, 36-38, West George Street, Glasgow.
 AMOS PERRY, Hardy plant farm, Enfield, Middlesex.
 BARRIE & BROWN, 39, King William Street, London, E.C.

MISCELLANEOUS.

CLIBRANS, Manchester—Carnations.
 HORACE J. WRIGHT, 32, Dault Road, Wandsworth, London, S.W.—Sweet Peas.
 BENJAMIN R. CANT & SONS, The Old Rose Gardens, Colchester—Roses.

FOREIGN.

P. BERNAIX FILS, Villeurbanne-Lyons (Rhône), France—Roses.
 THE ROYAL EILAND NURSERY CO., Hillegom, near Haarlem, Holland—Bulbs.
 DUCHESNE & LANTHOINE, Rue d'Ixelles, Watermael-lez-Bruxelles, Belgium—Orchids.
 CHR. KIEFF & SONS, Limmen, near Haarlem, Holland—Bulbs.
 C. SPRENGER, Vomero, near Naples, Italy—New and rare Plants, Trees, Shrubs, &c.
 W. ATLEE BURFEE & CO., Philadelphia, U.S.A.—Sweet Peas.
 HAAGE & SCHMIDT, Erfurt, Germany—Novelties in Flower Seeds.

SCHEDULES RECEIVED.

BATTERSEA, CLAPHAM AND WANDSWORTH AMATEUR CHRYSANTHEMUM AND HORTICULTURAL SOCIETY'S autumn show to be held on Friday and Saturday, November 1 and 2, 1907, at the Town Hall, Lavender Hill. Secretary, Mr W. J. Lavender, 56, Fullerton Road, East Hill, Wandsworth, S.W.

NATIONAL ROSE SOCIETY'S autumn show to be held in the Royal Horticultural Hall, Vincent Square, Westminster, on Tuesday, September 24. Hon. secretary, Mr. Ed. Mawley, Rosebank, Berkhamsted, Herts.

DEVIZES BENEVOLENT SOCIETY'S annual Chrysanthemum show and bazaar, to be held in the Corn Exchange, Devizes, on Tuesday, November 12, 1907.

ANSWERS TO CORRESPONDENTS.

* * * The Editor will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for forming Supplementary Illustrations to this Journal.

ALTERATIONS TO A POND: *Constant Reader*. The plants you mention may be shifted with safety now, provided a quantity of soil is allowed to remain about their roots and a good watering is applied immediately after transplantation.

BEGONIA LEAVES DECAYING: *S. B.* See reply to *F. J. T.* in the last issue, p. 208.

BROAD BEANS: *C. T.* The pods had turned black when we received them, and we could detect in them nothing different to an ordinary variety of the common Broad Windsor Bean. You did not state in your letter what colour they were.

CARNATIONS FAILING: *Anxious Enquirer*. Your plants have the appearance of what has been termed "Bacteriosis," but no bacteria or other fungus can be found. There is a suspicion of eelworms in the leaves, but we failed to discover the actual pest.

CUCUMBERS DYING: *E. S.* There is no fungoid disease present on the portion of the plant you have sent us. Several eggs of insects were present on the stem. You should have forwarded leaves for examination. If you suspect the spot disease to be present, spray the plants with liver of sulphur, using half an ounce of this chemical in two gallons of water.

DUCK WEED ON PONDS: *C. E. M.* This plant floats upon the surface of the water, and it can be skimmed off quite easily by means of a fine net, or you may destroy it by spraying with a strong solution of copper sulphate, taking care to keep any water-fowl enclosed in pens for some time after its application.

GRAPES: *G. H.* The bunches generally exhibit a lack of proper cultural treatment. The berries are badly shanked and are small in size. Shanking is a condition which generally results from trouble at the roots, such as a stagnant soil or an impoverished rooting-medium. In the resting season overhaul the borders and endeavour to promote a healthy fibrous root-system in the vines by affording the necessary conditions for healthy growth. Over-cropping in a previous year may have

had something to do with the unsatisfactory crop of the present season.

HERBACEOUS PLANTS: *C. P.* We cannot recommend you a book in which every herbaceous plant is included, and described as "herbaceous" in the sense that is meant in the prize schedules. Generally speaking, an herbaceous plant is one that is incapable of forming a woody stem that will continue from one year to another. All the *Liliums* you mention are herbaceous plants. But in some cases, when a class is arranged for flowers of herbaceous plants, the compilers of the schedule have it in their mind to exclude the flowers of bulbous plants. If they express this desire by writing in parentheses (bulbous and tuberous-rooted plants excluded), the exhibitor has no excuse for showing what is not permissible, but the stipulation is not always printed, even when it is the intention of the committee to exclude such flowers. Most of the difficulties you name arise from the mistaken practice of compiling a schedule first, and having it to interpret afterwards. The better system is for the compilers to consider the wording for a particular class in the light exhibitors may be expected to regard it, and, by explanations, endeavour to leave it in such a condition that it will be impossible for reasonable men to interpret the requirements of the committee in different ways. We consider that where the reading of the schedule is merely that the flowers must be of herbaceous species, the exhibitor should not be disqualified if he includes flowers of tuberous or bulbous species.

HORTICULTURAL BOOKS: *M. C.* We have no knowledge of the exact value of the old works you have mentioned. Their worth could only be determined by offering them in a public sale or by advertising them. The most valuable of those you enumerate is *Louden's Arboretum et Fructifera Britannicum*.

LEMON MINT: *W. K.* We cannot trace this name in any of the works on popular names of plants. The so-called lemon plant of gardens is *Lippia* (*Aloysia*) *citriodora*.

LONDON PARKS: *C. H. H.* Application forms for employment in the London County Council Parks may be obtained from Col. Sexby, 11, Regent Street, London. In the case of the Royal Parks, Central—Hyde, Regent's, &c., apply to the respective superintendents.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers.* FRUITS: *B. S. Scott*. Pear *Beurré Clairgeau*.—*G. A., junr.* Apple *Dutch Codlin*.—*A. W. T.* Plums: 1, *Goliath*; 2, *Pond's Seedling*; 3, *White Magnum Bonum*; 4, *Kirk's Blue*; 5, not recognised; 6, *Belgian Purple*.—*Lay*. Apples: 1, *The Queen*; 2, *Emperor Alexander*; Pears: 1, *Jargonelle*; 2, *Marie Benoist*. Numbers 3 and 4 are small and immature. Pears, and indeed all fruits, submitted for naming should be ripe, or nearly ripe, when despatched. The season of ripening affords a valuable aid in determining the variety. Two fruits of each kind should always be sent, and it is well to enclose a shoot with foliage. In the case of Peaches and Nectarines this condition is imperative.

PLANTS: *G. H. C.* 1, *Codiaeum longifolium*; 2, *C. variegatum*.—*G. W. W. & Co.* *Genista tinctoria*, a perennial plant. We have never heard of this plant possessing poisonous properties, and suspect it is unlikely to be injurious to cattle, unless they consume it in extraordinary quantities.—*C. S. G.* We do not undertake to name varieties of Carnations.—*T. H.* 1, *Bletia Shepherdii*; 2, *Habenaria ciliaris*; 3, *Goodyera repens*; 4, *Pteris tremula*; 5, *Selaginella*

apus; 6, *Coelia Baueriana*.—*T. F., Bromley*. 1, *Begonia garden hybrid*; 2, *B. foliosa*; 3, *B. parvifolia*; 4, *B. Weltoniensis*; 5, *B. argyrostigma*; 6, *B. incarnata*.—*E. Con.* 1, *Olearea Haastii*; 2, *Pavia macrostachya*; 3, *Viburnum Lantana*; 4, *Pear Gourd*, a variety of *Cucurbita Pepo*; 5, *Campanula*, not recognised.—*H. F.* *Elodea canadensis* (syn. *Anacharis Alsinistrum*). This troublesome water-weed should be braked out and destroyed. It propagates itself with the greatest freedom. See an article on the subject of destroying water-weeds in *Gardeners' Chronicle* for May 25, 1907, p. 331.

PLUM-TREE RUST: *E. M. M. W.* Your Plum trees are badly infested with the Plum-tree rust (*Puccinia pruni*). Gather up and burn all the falling leaves to prevent the disease spreading.

ROSE FOLIAGE FOR EXAMINATION: *Constant Reader*. Nos. 1 and 2 have no fungus disease present, and the trouble is due to some cultural error, which has caused a check to the plants. Drought would be sufficient to cause the unhealthy appearance of the foliage, or an unsuitable rooting medium may account for the trouble. No. 3 is affected with Rose blotch *Actinonema Rosæ*; No. 4 with *Sphærotheca pannosa*, the common Rose mildew; and No. 5 with *Phragmidium subcorticium*, and its *Uredo* form, the Rose rust. Syringe all your plants with *Bordeaux* mixture. They are in a very unsatisfactory condition.

TENNIS LAWN: *H. J. P.* As the court will not be required for playing upon until 1909, your best plan will be to level the ground, enrich it with manure if necessary, and sow a suitable selection of grass seeds early next spring. It is rather late in the season for sowing at the present time; should you do so, you could top-dress with a mixture of soil and seeds in the spring.

THE RAISING OF HARDY CONIFEROUS TREES FROM SEEDS: *C. W. A.* Conifer seeds are best sown out-of-doors in March or April, either broadcast in beds about 3 feet 6 inches wide, slightly raised above the surrounding ground, or in drills or rows similar to those prepared for Onion seeds. The soil should be moist, but not wet, and the seeds lightly covered with fine soil. If birds are troublesome, spread a net over the seed beds, which should be kept free from weeds. In dry weather water should be given through a fine rose water-pot. Seeds may be obtained through a nurseryman.

TOMATOES DISEASED: *J. E.* The fungus is propagated by spores which are disseminated by the wind and other agencies, so that perfectly healthy plants may become infested through no fault of the person who has care of them. It is very improbable that the disease is transmitted through the seeds, but these may have spores of the fungus adhering to them. These spores would be ready to germinate concurrently with the Tomato-seeds. Dull, damp weather favours the growth of the fungus, therefore it has been prevalent this season.

TRUSS OR SPRAY: *W. J. L.* The term truss or spray, as applied to Chrysanthemums, is generally considered to describe a shoot bearing several blooms or a branched growth, having several flowers on each branch. A single shoot with one large flower could hardly be considered a "spray," but a shoot possessing three or more flowers might be considered a spray, even if disbudding had been practised to some extent. The schedule should, in each case, declare how such terms are to be interpreted, and, if this were given proper attention, it would not matter much what view was taken by a particular committee, because all the exhibitors would know it, and therefore all would be competing under equal circumstances. You may refer to the correspondence and illustration in *Gardeners' Chronicle* for December 16, 1905.

COMMUNICATIONS RECEIVED.—*W. C. & Sons*—*W. J. S.*, Boston, Mass.—*B. C. D.* (next week), *J. Chilcott*.—*F. T.*—*W. O.*—*J. T.*—*J. S.*—*E. L.*—*C. D.*—*T. B.*—*T. B.*—*J. T. S.*—*H. C. P.*—*W. D.*—*A. U.*—*W. P.*—*E. J.*—*H. A. S.*—*W. E. B.*, Trinidad.—*F. S.*—*W. P.*—*F. D.*—*S. A.*—*S. P.*—*W. A. C.*—*H. W. W.*—*E. M.*—*J. C.*—*H. C.*—*H. C. S.*—*T. W. F.*—*M. W.*—*A. P.*—*H. S.*—*G. R.*—*W. G.*—*L. G.*, Brussels.—*T. H.*—*R. P. L.*—*C. P. R.*



THE

Gardeners' Chronicle

No. 1,083.—SATURDAY, September 28, 1907.

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THE HARDY "BROOMS."

PROBABLY no class of hardy plants has a more decorative value in the shrubbery, the woodland, or the rockery than the members of the genera *Cytisus*, *Genista*, and *Spartium*, more commonly known under the collective title of Brooms. The general character of the various species and varieties is that of a light, graceful habit. The plants produce abundant flowers, which are usually of a shade of yellow, but vary considerably in their size, and in the time at which they are produced. The following notes are not intended to be an exhaustive description of every species and variety in cultivation, but concern merely those which, in the writer's opinion, should be given a place in every garden of appreciable size. All the Brooms thrive best in light, sandy soil, and are not easily affected by drought when once they have become established, as the long, slender, wiry roots penetrate deeply into the sub-soil and generally find sufficient moisture there for their needs. The plants need to be fully exposed to the sun, or they will not flower freely. The species mentioned below should be propagated by seeds unless otherwise stated.

CYTISUS.

C. ALBUS (White Spanish Broom).—This is a native of Spain and Portugal, and forms a bush 12 feet to 20 feet in height, with slender, arching branches clothed from end to end in May with small, pure white flowers. In a young state this Broom has a tendency to grow very fast, and develop a thin habit, but this may be easily rectified by sacrificing the flowers for a year or two, and cutting the plant back in spring in order to induce it to form a denser habit. It will grow almost anywhere, and is easily increased by seeds, which are freely produced.

C. ARDOINI is a dwarf, spreading plant, growing only a few inches high, and suitable for a dry, sunny spot on the rockery. The flowers open during April and May, and are of a bright yellow colour. The shoots spread out symmetrically on all sides, and do not get long and ragged like those of some trailing plants.

C. CAPITATUS.—This species is not a very important member of the genus, but may be mentioned as perhaps the best of the two or three species, such as *C. biflorus*, *C. hirsutus*, &c., in which the flowers are borne in capitate heads or short, terminal spikes. They are of a bushy habit, and grow from 2 feet to 3 feet high. The flowers of *C. capitatus* are of a soft yellow colour, and open in June.

C. FRIVALDSKYANUS (*C. schipkaensis*).—This is a native of the Balkans, and forms a good subject for the rockery, as it only grows a few inches high, and does not spread to any great extent. The flowers are white, and they are produced in May.

C. × KEWENSIS (*C. Ardoini* × *C. albus*).—This is a dwarf, spreading plant, which was raised in the Royal Gardens, Kew, and will be a popular rock plant when it becomes better known. In habit it is free and vigorous, sending its slender shoots out on all sides, and soon covering a good space of ground. The flowers are of a creamy-white colour, and open in May. The influence of *C. albus* is shown chiefly in the colour of the flowers, but it is also apparent in the vigour of the plant, as compared with *C. Ardoini*. Propagation may be effected by cuttings or layers.

C. NIGRICANS.—This is an upright-growing shrub, with slender shoots attaining a height of 3 feet to 4 feet, clothed from June to September with bright yellow flowers. It is a native of Europe, and is an old introduction to English gardens, but is not seen as often as is justified, both by its attractiveness and long period of blooming.

C. × PRÆCOX (*C. purgans* × *C. albus*).—This hybrid is one of the loveliest of spring-flowering shrubs, and also one of the most free-growing. It makes a bushy plant from 4 feet to 6 feet high, and as much in diameter, with slender, arching shoots clothed from end to end with sulphur-yellow coloured flowers, which appear in April and early in May. When not in bloom it makes a distinct and effective evergreen plant. Propagation may be effected by cuttings.

C. PURGANS is a native of South-west Europe, and makes a bushy plant about 2 feet high, bearing deep yellow flowers in

spring. It is rather a difficult plant to grow, and should always be increased by seeds, as cuttings often die away from no apparent cause.

C. PURPUREUS.—This is a prostrate, spreading plant suitable for the rockery, or a dry bank. It is sometimes seen grafted as a standard on the Laburnum, but no worse way of treating a thoroughly beautiful plant could ever have been devised. When in full bloom in May on a rockery it makes a welcome sight, with its purple-coloured flowers, which are darker and finer than when the plant is elevated out of its proper position.

C. SCOPARIUS (Common Broom).—This is a well-known wild plant growing on light, sandy soils throughout Great Britain, but is not used half so much in the wild garden as it should be. It delights in dry, sandy ground and plenty of sunshine, and where the soil is heavy it can be made suitable for this Broom by adding ashes, mortar-rubble, or some similar material. The bright yellow flowers are produced in May and June from end to end of the long, whip-like growths.

C. s. var. Andréanus.—The variety *Andréanus* was found growing wild in France by M. André, after whom it was named. It is a free-growing, bushy plant with brownish-crimson and yellow flowers opening a little earlier than those of the common Broom. To grow this plant successfully it should be either on its own roots or grafted on stocks of *C. scoparius*. The grafted plants are apt to decay upwards from the base either sooner or later. When, however, this Broom is grafted on the Laburnum, as is often done, it generally dies within a year or two. Seedlings rarely, if ever, come true to name, being either yellow or poorly coloured.

C. s. var. pendulus.—This form has a weeping habit, rendering it suitable for an exposed position on the rockery or a dry bank, as it is a strong grower and soon covers a large space of ground. The plant is very handsome when bearing its pale yellow flowers, and it is surprising that it is not more often seen. The variety may be easily propagated by cuttings.

C. s. var. sulphureus (Moonlight Broom).—In this variety the flowers are of a creamy-yellow colour, and when in full bloom the common name is seen to be a very appropriate one. The plants grow about 4 feet or so high, are bushy, and very free-growing in habit. It is one of those strangely neglected plants in gardens, but it is a very handsome and desirable variety. Propagation can be effected by cuttings.

GENISTA.

G. AETHNENSIS. This is an upright-growing plant, reaching a height of from 10 feet to 12 feet, with long, thin, semi-pendulous branches, which become covered in July and August with small, golden-yellow coloured flowers, which are distinctly scented as of hay. The plant is most suited for the back of a shrubbery, or to be planted amongst low-growing evergreens, as it attains a tree-like habit in course of time, and shows a quantity of bare stem at the base. It is a native of Sicily, and is not at all common, though it

has been introduced many years to English gardens.

G. TINCTORIA (Dyer's Greenweed).—This is a common plant throughout the greater part of Europe, but is of no great garden value. The variety *elatior* makes a rather pretty bush about 3 feet in height when covered with its golden-yellow coloured flowers in August.

G. VIRGATA.—This is a tall-growing Broom, reaching a height of 15 feet or more, and requires the same kind of position as *G. æthnensis*. The flowers are of a bright yellow, and are freely produced in June on old plants; in a young state this species does not bloom very freely. It is a plant to be recommended for creating a bold effect amongst



FIG. 97.—RINDERA UMBELLATA: COLOUR OF FLOWERS DARK BROWN

evergreens, as it is well able to take care of itself in almost any situation. It is a native of Madeira, and may be easily raised from seed.

SPARTIUM.

S. JUNCEUM (Yellow Spanish Broom).—A native of Southern Europe, this species is a thin, upright plant, reaching a height of from 6 feet to 10 feet, with dark green, rush-like stems covered in August and September with comparatively large, yellow flowers, which are distinctly, though faintly, sweet-scented. It is an excellent plant for dry places, as it seems able to withstand much drought and nevertheless flower freely. J. Clark, Bagshot, Surrey.

NEW OR NOTEWORTHY PLANTS.

RINDERA UMBELLATA.*

This plant, belonging to the Boragineae (see fig. 97), which Mr. T. Smith, of the Daisy Hill Nursery, Newry, received from Belgrade under the name of *Mattia umbellata*, flowered with him for the first time in May of the present year. Mr. Smith remarks that it "comes from Eastern Europe, and is a most distinct plant. It has evergreen tufted leaves. The flower-stem grows to the height of 2 feet. Colour of the flowers, dark brown, but quite attractive. Dryish sandy soil seems to be the most suitable for it."

Though apparently long lost to cultivation in these islands, reference to Loudon's *Hortus Britannicus* or Paxton's *Botanical Dictionary* will show that the plant, under the name of *Cynoglossum umbellatum*, was first introduced in 1817. It is a native of the Banat, in south-eastern Hungary, and of Servia, where it grows on sandy hills. Whether *Symphytum regium*, *S. T. Gmel.*, *Reise*, iii. 363, t. 36, f. 1, a Siberian plant, referred by Lehmann to *Cynoglossum umbellatum*, is really identical, I am unable to determine, having seen a figure only. This certainly agrees fairly well, but the geographical distribution seems too remarkable. It will be observed that the *Index Kewensis* records a *Mattia umbellata* of C. Koch as well as *M. umbellata*, Schultes. The former is referred to *Rindera pubescens*, C. Koch, and is included in Boissier's *Flora Orientalis*, iv. 272, as *Cyphomattia lanata*, Boiss. This species is a native of Armenia, Asia Minor, Syria, Persia, &c., and has been in cultivation at Kew during recent years. It closely resembles *Rindera umbellata*. The fact is not made clear in the *Index Kewensis* that *Mattia umbellata*, Schultes, is the same as *Rindera umbellata*, Bunge, but it is evidently the same plant. Bunge, in the place cited below, merely made the necessary new combination.

Rindera umbellata may be briefly described as follows:—Stem solitary, simple, erect, leafy, 1 to 2 feet high. Leaves entire, acute or acuminate, canescent-pubescent; basal leaves oblong-lanceolate or ovate-lanceolate, attenuated at the base into a long petiole; cauline leaves lanceolate to narrowly lanceolate, the lower with a winged petiole, the upper sessile. Inflorescence terminal, of numerous pedunculate scorpioid cymes umbellately arranged. Flowers long-pedicellate. Calyx densely woolly, five-partite; segments linear-lanceolate, obtuse, reflexed in fruit. Corolla tubular, scarcely $\frac{1}{2}$ inch long, reddish-yellow or dark brown; throat of the tube closed with emarginate, purplish scales; lobes erect, oblong, rounded-obtuse. Stamens included or slightly exserted. Style slender, long-exserted. Nutlets ovate-orbicular, broadly-winged, smooth, about $\frac{1}{2}$ inch in diameter. S. A. S.

THE COUNTRY GARDEN.

In most country gardens, and indeed in not a few town and suburban ones, there are portions that must be treated differently from the rest, and, in a manner, more picturesquely. These are the wilder and more outlying positions, and probably they are more or less shaded by trees. To produce colour effects in such positions in broad masses from time to time during the year is of much artistic importance; and, while it is in evidence, makes these portions as beautiful, and many will say far more beautiful, than those treated more formally. To achieve these masses of colour, we turn instinctively to the smaller bulbous plants, as these lend themselves

in splendid fashion to that most effective of all styles of planting—bold, broad massing.

If the ground thus to be colonised has not been broken up for some years past, and has become over-run with Ivy, this should be rooted up or be very much thinned, though it is better to take it away completely. The ground should be deeply dug, and, where possible, old material from hot beds may be incorporated with the soil. It is a great mistake, though somewhat a common one, to grow too many different varieties of bulbous plants in the same quarter of woodland or copse. This tends to produce patches of colour here and there, rather than to bold effects. There is one difficulty with bulb colonisation that cannot be overlooked when a succession of displays is desired. It lies in the rank-growing and smothering habit of bulbous plants after flowering, so that it is almost impossible to have a second display while the foliage of the first plants covers the ground. In an old garden known to the writer there is a wide expanse planted with Snowdrops, another with Winter Aconites, and where these are established it is impossible to grow other small bulbous plants. But a great stretch of the early-flowering Snowdrop or the yellow *Eranthis* is of much worth and beauty. The Snowdrops fill the site of an old moat; the Aconites are planted on ground above it. They do not wholly die down and disappear until the beginning of June. But if other plants of a similar habit, or even such subjects as Primroses, cannot be associated with them on account of their foliage hid-

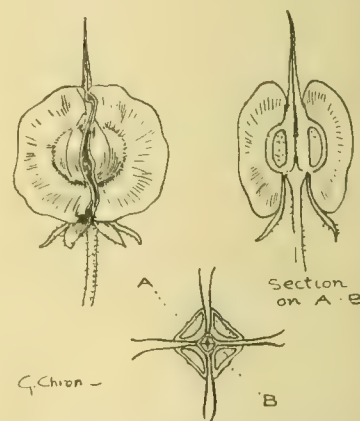


FIG. 98.—FRUIT OF RINDERA UMBELLATA WITH LONGITUDINAL AND TRANSVERSE SECTIONS.

ing these other plants, we may seek for a good effect at a later date—say, a summer effect—with the aid of Ferns, and, if it can be prevented from spreading and increasing too rapidly, the giant *Heracleum*. This last-named plant forms a suitable subject for planting in shaded positions. I have grown it under the shade of the Horse Chestnut, of all deciduous trees the one producing the densest shade.

There are, however, plants of a bulbous nature easier to deal with than Snowdrops and *Eranthis*.

By a suitable selection of subjects it is possible to have "a blue copse," the earliest display in which may be achieved with *Anemone blanda*, combined with *A. apennina*; both these *Anemones* are readily reared from seeds. The first-named species flowers somewhat earlier than the second, but both produce a very beautiful display of blue flowers during March and April. A second display of blue may be achieved for the following month of May with *Scilla festalis*—our native wild blue Hyacinth, and *S. hispanica*. The foliage of these *Scillas* appears late; therefore, it scarcely interferes with the display of *Anemones*. Departing from the idea of "a blue copse," a charming scheme can be made by using the wild, white *Anemone nemorosa* in the place of the blue varieties I have named, with the blue *Scillas* to follow them as in the first arrangement.

Scilla sibirica is another bulbous plant that is always more effective when broadly planted.

* *Rindera umbellata*, Bunge in *Mém. Sav. Etr. Pétersb.*, vii. (1851), 415, in note. *Cynoglossum umbellatum*, Walldst. and Kit. *Plant. Rar. Hung.*, ii. 158, t. 148 (1805). Lehmann, *Plant. Fam. Asperifol.*, 172. *Mattia umbellata*, Schultes, *Observ. Bot.*, 32 (1809), and *Oesterreichs Flora*, ed. 2, i. 363; Roem. and Schultes, *Syst.*, iv. 82.

Among hardy bulbous plants, none produces flowers of a richer blue than this *Scilla*, and it increases rapidly by self-sown seeds. By the New Year the blades of the seedlings appear through the ground, but many of the young plants will be found to disappear later. By lifting the seedlings whilst still young, however, and planting them in a spare border in the kitchen garden for two seasons, a quantity of good bulbs may be obtained, and these can be transferred to the woodland again. I cannot explain why this treatment should be necessary; it may be there is not the need for it in all soils.

A charming effect can be achieved by associating with these smaller bulbs others that attain to a greater height: thus, among the *Scillas*, groups of *Polygonatum* (Solomon's Seal) have a bold appearance, and, of course, this plant can equally well be associated with *Snowdrops*, *Eranthis*, *Muscari*, or *Crocuses*.

The *Muscari*, especially *M. botryoides*, is another early-flowering subject that is beautiful when massed, and it can be purchased very cheaply. The ground, shaded by a deciduous tree or trees, can be closely planted at very little expense. And, if a taller-growing bulbous plant is required for associating with the *Muscari*, especially if they are on the fringe of the woodland, few species are more suitable than *Fritillaria imperialis*. The growths of the Crown Imperial will not appear through the ground until the *Muscari* have ceased to flower, but once started they develop rapidly, and the changed effect of these tall, upstanding stems, following a dwarf carpet of *Muscari*, is pleasing. By planting a tall-growing subject such as this and others I have mentioned, the smothering habit of the earlier-flowering subject is no disadvantage.

Crocuses are not suitable plants for the woodland, but they are adapted for more open spaces, and notably for grass. They should be planted at once, and the sooner the better. On the Continent, and notably in Holland, it is the custom to plant bulbs earlier than in England, and there can be little doubt but that the longer period of growth thus afforded is beneficial, for by lifting some of these smaller bulbous plants that have been left undisturbed in the ground, it will be noted that so early as August they have already commenced to make root-growth. So far as I have knowledge, *Snowdrops* are the earliest of all bulbs to recommence growth. *Practical Gardener*.

THE ROSARY.

CULTURAL NOTES FOR OCTOBER.

To the rosarian, October is one of the busiest months in the year: it forms the dividing line between the summer and the autumn, and as the work of the one season ends, that of the other must be commenced. The examination of the Rose-border should constitute the first work; the plants in the borders should be inspected, and old and worthless sorts removed. The ground should receive the necessary trenching, manuring, and general preparation for planting at the end of October or early in November. If the soil is impoverished, the top spit should be entirely removed, and be replaced with some fresh material, consisting of two-thirds loam and the remaining third of equal quantities of burnt earth, road-grit, and manure from an old Cucumber bed. This compost should be mixed some weeks before it is required for use.

The drainage of all borders should be made efficient, as failures amongst Roses are often caused by unsuitable or water-logged soils. When plenty of space exists, and the beds or borders can be separated by grass, pleasing effects may be produced by planting varieties of separate colours in each bed. For producing a variety of colouring and a prolonged period of flowering, the best type of Rose is the Dwarf

Hybrid-Tea. A few Standard plants of crimson varieties of Hybrid-Perpetual Roses, planted thinly amongst the Dwarf Hybrid-Tea varieties, will give variety, and serve to counteract any appearance of formality in the beds. These latter Roses can be planted during October, or early in November, if the soil is in a moist condition. If the Hybrid-Tea varieties are planted during the autumn, provision must be made for protecting them from severe frosts: as an alternative to autumn planting, strong plants in pots can be planted out during the following April and May, when all danger of injury by cold is passed. An interesting bed may be made by planting Hybrid varieties of Bourbon, China, and similar types of Roses, a list of which was included in my notes for last month. These, together with the Standard Hybrid-Perpetual and Dwarf Hybrid-Tea plants, will furnish an uninterrupted succession of flowers from June to November. Further variety may be obtained by planting a selection of Climbing Roses on arches, pillars, or pergolas.

A plot of vacant ground should be reserved for planting next month a few Standard plants of Briar and other Rose stocks. In the meantime, the ground should be well-trenched and manured. These stocks are always useful for the propagation of new, desirable, and scarce varieties, and, when budded or grafted, can be used to replace old or worn-out plants. Planting should be done early, provided the ground is thoroughly moist at a moderate depth below the surface, but here in Portsmouth, at the time of writing, the soil is so dry that any such operation must be deferred until a heavy downpour of rain. This severe drought is, I believe, quite local, as no complaint of dryness has reached me from other districts.

The first batch of Roses intended for early forcing, and that have been given the necessary top-dressing or re-potting, should be brought into a cold house or frame at the end of October. An abundance of ventilation should be given both night and day, and the plants should be kept moderately dry at their roots for some time. After being lightly pruned, an occasional syringing overhead, on bright mornings, for a few weeks will assist the plants to break into growth, and it will also cleanse the foliage from insect pests. When new shoots are pushing, the amount of ventilation should be reduced, and the houses should be closed early in the afternoon. The wood being well matured on these plants, they will respond to a little forcing, and extra warmth should be applied about the third week in November. At this stage the temperature should range from 45° to 50°, and this temperature can be increased after Christmas.

Amongst the best varieties of Roses now in bloom are Frau Karl Druschki (the premier white Rose), Gloire Lyonnaise (of a fine lemon colour), Kaiserin Augusta Victoria, Caroline Testout (a fragrant, pink variety), Mildred Grant (flesh colour), Souvenir de C. Guillot (a strong grower, with bronzy leaves and superb copper-coloured flowers), Papa Gontier (a grand decorative Rose, deep crimson-tinted in the bud), and G. Nabonnand (a flesh-coloured Tea variety, and one of the most certain and constant in flowering).

Young plants of pot Roses that are plunged outside and temporarily protected with glass frames can remain in the same position as they now occupy until the end of October, or even well into November, providing the weather remains mild. These plants often furnish choice blooms quite late in the season, when they are thus slightly protected.

ROSE CUTTINGS.

October is the best time for inserting Rose cuttings, provided the ground is quite moist. Well-ripened shoots about 9 inches long, of hardy, free-growing, decorative varieties

should be selected, and the cuttings should be made with a "heel" of the old wood attached. The cuttings should be planted in a position facing north. Cut out a trench 10 inches deep, place 3 inches of sandy grit and leaf-mould at the bottom of the trench, and arrange the cuttings in rows at a distance of 3 inches apart, allowing 18 inches between the trenches. Tread the soil about them firmly, and make the surface of the ground level, when two or three buds should appear above the ground. When this is finished, cover the whole with a mulch of Cocoanut-fibre. In my list of best autumn-flowering Roses, I neglected to include varieties of *R. rugosa*. These have mostly high-scented blooms, the plants make large-sized bushes, and are almost evergreen. This type of Rose is invaluable for urban and smoky districts, and the flowers are followed by very handsome fruits. The best varieties include *R. rugosa delicata* (a very sweetly-scented variety), *R. r. alba*, and *R. r. fimbriata* (a blush-pink variety whose petals are prettily fringed).

POT ROSES.

If the stock of pot Roses for forcing requires renewal, October is the best month for the work. Pot up fresh maiden plants, and for this purpose I recommend dwarf plants that have been worked on the seedling Briar stock, and the plants should be strong, well ripened, and have three or more branches. They should be potted firmly, using pots of 5, 6, or 7 inches in diameter, according to the size of the individual plant. Particulars have already been given in a former note of a suitable soil and compost, and the best varieties of Roses for pot culture were enumerated. When the potting is completed the pots should be plunged in ashes outside till after Christmas, or until the roots are well established in the new soil.

In conclusion, I will briefly refer to planted-out Roses under glass. Hybrid and Perpetual varieties are seldom planted out, as the Tea, Hybrid-Tea, Noisette, and China varieties are much freer both in growth and in flowering. It is an advantage to have a single flow and return pipe around the house in which they are grown. Some of the plants should be lightly pruned at the end of this month, and the remainder at intervals, for succession. Another soaking of water should be applied at the roots, and the foliage should be first cleansed with a suitable insecticide, and afterwards be syringed with clear water. An abundance of ventilation should be given at the present time; the amount of air admitted from outside can be reduced later in the season, and the plants be gently started into growth. From now onwards the night temperature should not be lower than 45°. *J. D. G.*

COLONIAL NOTE.

WATSONIA ARDERNEI.

I DISAGREE with *E. P.* (see *Gardeners' Chronicle*, August 3, p. 93), when he states that the best flowers are obtained from bulbs that are not shifted when dormant, and that it is a mistake to allow the bulbs to become thoroughly dry. I find it is not detrimental to the bulbs for them to become dry, provided they have thoroughly ripened before lifting, as it rests them to be taken out of the ground. My plan is to lift the bulbs every season at about January, sorting them into different sizes. I plant them again at about the end of March. The spikes are cut off from small bulbs as soon as they show, as better flowering bulbs are thus obtained for the following season. If the bulbs are lifted every season, the spikes and flowers are much larger than if left undisturbed. They should not, in any case, be left in the ground undisturbed for more than two seasons, as they get crowded and weakly in growth. *J. T., Cape Town*.

[The photographs were not suitable for reproduction. Ed.]

PELARGONIUM "CLORINDA."

THE specimen, of which an illustration is given at fig. 99, is one of the many plants grown at Gunnersbury for the purposes of terrace decoration. It is one of the sweetly-perfumed foliage varieties that are at the same time extremely useful as flowering plants. The variety is very distinct in its colouring, being a soft rose-pink. Already it has proved to be valuable as a winter and early spring-flowering plant. It has been frequently shown at the fortnightly meetings of the R.H.S. by Messrs. H. Cannell & Sons and H. B. May & Sons, as a small decorative plant, but, as the illustration shows, it may also be grown into a specimen. This particular plant is 8 feet in width and 6 feet high. I am disposed to think it would prove to be a most valuable plant either for covering walls in corridors and like structure, or for

NOTES FROM A CORNISH GARDEN.

FOLLOWING a spring of unusually good promise, the weather of the present summer has proved most disappointing, and, save for a few days in July, it has been what the farmers call a "dropping season." And yet, save for fruit, there is very little cause for complaint in the matter of garden produce; indeed, I never remember looking over the crops in August with greater satisfaction. But I should state that our garden is naturally drained; in low-lying districts the prospects are probably very different. Weeds have been abundant this season and rank in growth; hoeing has been almost useless as compared with the utility of that operation in normal seasons, and it has been dispensed with in favour of forking and hand-pulling of the weeds.

and weather-beaten, but lately they have grown much better. Tomatos planted in the open will be so late in swelling their fruit that I fear the crop will be below the average. Carrots, Parsnips, and Onions are unusually large, both bottom and top growth. Carrots sown in July require much watching, or they will soon be devoured by slugs. Early Potatos cropped heavily: Sutton's Abundance and Carter's Royalty, as second earlies, gave a very good yield. Late Potatos are not a heavy crop with us, and disease is prominent in the field crops. Celery has benefited by the dull, damp season, and has grown strong and plump. Runner Beans and late Peas are promising crops. Saladings have been abundant.

THE FLOWER GARDEN.

This season has been favourable to those plants that require a constant supply of



FIG. 99.—PELARGONIUM "CLORINDA" CULTIVATED AS A SPECIMEN: COLOUR OF FLOWERS ROSE-PINK.

training into columns. The plant is strongly scented of Lemon, even stronger than many of these fruits as seen in this country. Clorinda was raised by Dr. Bonavia, and was awarded an Award of Merit by the Floral Committee of the R.H.S. on May 1, 1906, being shown by Messrs. H. Cannell & Sons (see Supplementary Illustration in *Gardeners' Chronicle*, April 15, 1905). It recalls the variety known as Robinson's Unique both in habit and in the downy character of its leaves, which in a robust plant are abnormally large. Dr. Bonavia stated in *Gardeners' Chronicle*, April 15, 1905, that he raised it from seeds of *P. quercifolium*, but that its male parentage was not known. There is another Pelargonium called "Bridal Ring," which has flowers of a purplish shade, but in other respects it resembles Clorinda. J. Hudson.

Amongst vegetables the Cauliflowers grew strongly and made good-sized heads, but they were occasionally damaged by slugs; Early London is my favourite Cauliflower for summer use. Autumn Cauliflowers, such as Walcheren and Veitch's Autumn Giant, appear very promising. Caterpillars are, happily, absent. Broad Beans have been, on the whole, fairly satisfactory, notwithstanding the fact that in May the plants were covered with flowers when the stalks were not more than 1½ feet in height. Afterwards they made a vigorous growth, and reached their usual height about midsummer. Asparagus furnished a weak early, but a good strong late, cutting. French Beans, raised in pots under glass and planted out on a warm border the last week in May, gave no pods until the end of July; all the season these Beans have appeared very weak

moisture, and, as a rule, strong-growing plants are abnormally tall and succulent. Flowering shrubs, such as Rhododendron, Pittosporum, Pyrus, Olearia, Kalmia, Ceanothus, Magnolia, Choisya, Viburnum, Philadelphus, Veronica, Weigelia, &c., have made exceptionally strong growths, and if a dry, sunny autumn ensues, so that the wood becomes ripened, a good display of flowers should follow next spring.

Amongst herbaceous plants there are a few subjects which have not enjoyed the dull summer. The growths of Pæonies are only now maturing. Sweet Peas have reached a great height, especially those sown last autumn. The rain somewhat marred the beauty of these flowers, though they looked charming for a few days in July. *Iris germanica*, *I. Kämpferi*, and *I. xiphioides* in variety have bloomed and grown

well. Such genera as *Helianthus*, *Inula*, *Lychnis*, *Rudbeckia*, *Aster*, *Geum*, *Francoa*, *Cimicifuga*, *Campanula*, *Gaillardia*, *Arenaria*, *Pyrethrum*, &c., have done well in a wet season. Amongst bedding plants the tuberous-rooting *Begonias* have proved disappointing; these have suffered, perhaps, more from the low temperature and boisterous winds than from an over supply of water. Their growth is short and cramped, their flowers are short in the stem, and the petals are poor in substance. *Gladiolus gandavensis*, *G. cardinalis*, *G. Childsii*, *G. nanceianus* vars. have developed spikes of gorgeous flowers of fine size, substance, and colour. In one large flower-bed occupying a position of prominence near the residence a number of spring bulbous flowers were planted. The first to flower were Winter Aconites and Snowdrops, and these were followed at intervals by *Iris reticulata*, *I. persica*, large trumpet-flowered *Narcissi*, *Narcissus incomparabilis*, *N. poeticus* vars., *Gladiolus Colvillei*, *G. gandavensis*, *G. Childsii*, and *Hyacinthus* (*Galtonia*) *candicans*. Thus there has been a display in this bed from early spring until September. *Rudbeckia maxima* is showing its flowers—a splendid plant is this. *R. purpurea* is already in flower, and I am delighted with this species, having seen it for the first time this season. *Sidalcea Listeri*, *Oenothera Youngii*, *Montbretia rosea*, and many charming varieties of the perennial *Phlox* have made the herbaceous border “a thing of beauty.” Roses of all sections have grown very strongly and have flowered well. *H. W., Trevice.*

AUTUMN - FLOWERING CROCUSES.

(Concluded from page 212.)

C. LONGIFLORUS.—The slender leaves and equally slender flowers of this species appear together late in the season. The flower-tubes are so slender that the first rainfall lays the flowers low, and they need a protective carpet of mossy *Saxifraga* or some similar plant. The flowers appear through the soil in November, and before they open appear like tiny spikes with inflated tips. When expanded they have the form of a star, and in colour are a delicate rosy-mauve with purple venation; the stigma is of brilliant scarlet colouring. The plant flourishes in the rock garden in almost any soil, but it requires to be sheltered from winds. It is a native of Southern Italy, and there is a form named *Wilhelmi* which has light lilac flowers that are heavily veined externally with bronzy-purple.

C. MARATHONISIUS.—This species is one of the finest of all white autumn-flowering Crocuses, but it is too rare to admit of extensive planting. It has shapely flowers 4 inches high, yellow stigma and basal colouring.

C. MEDIUS.—This species is among the best of autumn-flowering Crocuses. The petals are broad and overlapping, and when widely expanded the characteristic cup-like outline is not lost. The flowers exceed 6 inches in height, and in well-grown plants the petals are 2 inches in length and an inch in width. The colour is a clear mauve-purple, with scarcely any veining, and the stigma is a cluster of rich scarlet filaments that droop gracefully when the flower ages. The habit is sturdy, and it is easy of culture. The leaves develop very slowly throughout winter, and are not matured until April. The corm is as large as that of *C. speciosus*. I regard this plant as the finest of the rarer autumn Crocuses. Its colour scheme is pleasing, and its shape all that can be desired.

C. FULCHELLUS produces model flowers in respect of neatness. They are smaller than those of the better known *C. zonatus*, and have the characteristic cup shape. They are lavender-blue in colour, and show many fascinating tints of silvery-lavender as they age. The inner

petals only show a richer veining of purple. This is a lovely subject for planting in grass, and it grows readily in short turf in sunny situations. The season of flowering is September and October.

C. SALZMANNI.—In most gardens this species proves disappointing. Its flowers are not of the best type; they are pale purple in colour, with deeper venation. In addition to being somewhat difficult to flower well, the plant rarely manages to perfect such flowers as are produced. It forms large corms and huge tufts of grassy leaves, among which the flowers nestle. The species is a native of Tangiers.

C. SATIVUS.—This is also a disappointing species. No matter how well the plants are grown and how well the corms are ripened, few flowers are produced. It is a vigorous-growing species producing huge tufts of leaves and showy flowers that are coloured rich lilac, with veining and basal colouring of purple. The showy scarlet stigma produces the saffron of commerce. It is a variable plant, ranging from pure white (seen in the variety *Cartwrightianus*) through many shades of lilac to purple. Specialists sometimes succeed in flowering a few specimens, but, generally, cultivation in this country is disappointing, the corms failing to develop sufficiently and to ripen well. It is widely cultivated for producing saffron, and inhabits Eastern Europe and Western Asia.



FIG. 100.—A STREPTOCARPUS GROWN BY MR. BURDETT.

C. SCHAROJANI.—This is a very rare *Crocus* and one which I have not been able to keep for any considerable time. The flowers are of a beautiful rich orange shade.

C. SPECIOSUS.—In many respects this is the most useful of all the autumn-flowering Crocuses. The colour of the flowers is a clear blue, feathered and veined with blue-purple, and the stigma is a cluster of rich orange filaments. The plant can be recommended for any position in the garden. The colour of the flowers—a soft but clear blue—is very attractive. The corms deteriorate in very poor soils, but they thrive and increase fast in rich land. Seeds germinate where they fall, and young plants arise in thousands at the spots where the plants have flowered. I have now a plot of land that is infested with seedling *C. speciosus*, and it is likely to remain so for many years, for it is almost impossible to exterminate it. Some very old clumps that have “dropped” below a spade’s depth throw up some wonderful flower clusters that surpass normally grown *Aitchisoni* in colour and size. The variety *Aitchisoni*, although similarly coloured, is much larger in size. I measured a flower last year whose petals exceeded 4 inches in length. It is not so good a plant for planting in grass as typical *C. speciosus*, but it succeeds better in a cultivated border than that species. I have

descriptions of a white variety and a self lilac variety in my notes on this genus, but I cannot remember where I saw them.

C. TOURNEFORTII.—This may be classed amongst the troublesome flowering Crocuses. The corms are large, and they develop showy rosy-lavender flowers and huge clumps of leaves with a flower occurring among them here and there. Its garden value does not surpass that of *C. Salzmanni*.

C. ZONATUS is a free-flowering and easily-grown species that should be planted freely in any soil that is not infested with predatory insect life. It will thrive in grassland and in well-tilled borders, but it prefers the hard, half-tilled soil of a shrubbery border. Its large, flat corm is distinct from those of any other Crocuses, and it is worthy of note that mice do not injure this species much. Wireworm, eelworm, and other ground pests, however, attack the corms badly, and one should be careful in planting this species to find out if the soil is infested with these pests. The flowers of *C. zonatus* are exceptionally choice. They are cup-shaped, coloured a delicate shade of rosy-lavender, with semi-transparent veining, and there is a ring of light red at the base of the cup. The stigma is a collection of pale yellow filaments. *G. B. Mallett.*

STREPTOCARPUS BURDETT'S STRAIN.

THE *Streptocarpus* illustrated at fig. 100 represents a plant of the strain that received an Award of Merit from the Floral Committee of the Royal Horticultural Society when shown by Mr. F. Burdett, Scotswood Gardens, Sunningdale, on August 20. Mr. Burdett, who has obligingly furnished us with the photograph from which our figure was prepared, states: “I have in pots plants with a diameter of 24 inches, that have from 60 to 70 flower-spikes present on each, and the plants have been in flower since June. The seed was sown in pans that were provided with plenty of material for drainage, this being covered with decayed leaves freed from worms. The soil was of equal parts loam, leaf-mould, peat, and coarse silver sand, and the pans were filled with this compost to within $\frac{3}{4}$ of an inch of the rim. They were placed in water to half the depth of the pan for 30 minutes, and afterwards $\frac{1}{2}$ an inch of fine, damp soil was lightly pressed down, and the seeds sown thinly and evenly on a convex surface without any covering of soil, but covered with a sheet of glass. The pan needs to be soaked occasionally, for the soil must never be allowed to become dry. Allow the seedlings to become well advanced before they are pricked out into pans or pots, and give proper attention to the matters of shading and watering. After the plants have done flowering, gradually reduce the supply of water till the largest leaves decay, and place them in a cool-house or frame where they will be protected from frost. Early in January or February remove the plants to a house having a temperature of 50° to 60°. Give a good soaking with water, and new growth will commence. They should then have the old soil shaken away from their roots and be afterwards potted into their flowering pots. Keep the plants on the dry side until the roots are active. Syringe overhead and amongst them, for *Streptocarpus* require plenty of moisture in their early stages of growth. When the plants begin to develop their flowering stems, give the roots weak cow-manure water and soot, which has been previously prepared in a tub with hot water, the hot water being used for the purpose of destroying any insects that may be present. A suitable compost for the final potting consists of fibrous loam two bushels, leaf-mould and peat one bushel each, one peck of old cow manure, one gallon of charcoal, some mortar rubble broken up, one $\frac{1}{2}$ -inch pot full of bone meal, and one peck of coarse sand.”

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM SPICERIANUM FROM SEED.

IMPORTED plants of this fine species vary considerably, both in size and colour, the proportion of first-class varieties being very small. Having a very fine form of *C. Spicerianum*, Mr. H. A. Tracy, of Twickenham, fertilised it with its own pollen, obtained seeds, and raised a good number of plants, some of which flowered last year, and all are now in bloom. The flowers are of the "magnificum" class, with large, white dorsal sepal, slightly shaded with rose on the lower half, and with a broad, claret-coloured band in the middle. Although the plants are still young, they show a marked advance on the imported varieties, and prove that much might be done with advantage in the matter of seeding good varieties of imported species.

ANGRÆCUM ROTHSCILDIANUM.

It is to be regretted that this very remarkable and pretty *Angræcum*, the only representative of the *A. Galeandræ* section in cultivation, should have been imported only on the one occasion when the Hon. Walter Rothschild obtained a few plants of it in 1902 from the Uganda district. It flowered at Tring Park in 1903, and was illustrated in the *Gardeners' Chronicle*, August 22, 1903, p. 131. It has flowered annually at Tring Park, and is now in bloom there. The habit of the plant is similar to that of *Angræcum bilobum*; the flowers, which are each about 2 inches across, are borne on a short raceme, and are white with a blackish-purple base to the emerald-green disc of the lip. The flowers are very fragrant, and are capable of lasting a long time in bloom.

LÆLIA SIDNEYANA (L. CINNABARINA × L. JONGHEANA).

A BATCH of this pretty hybrid has been flowering in Mr. H. A. Tracy's Orchid Nurseries, Twickenham, for the last two months, and still there are many of the plants in bloom and bud. It has the habit of *Lælia Latona*, and the flowers equal that variety in size and shape, but the sepals and petals are narrower. The different varieties vary in colour from clear apricot-yellow (with orange-coloured lip having a rose-coloured margin) to light orange, which is tinged and veined with reddish-rose and with mauve margin to the lip. Its free-blooming qualities make it a desirable decorative plant.

The Week's Work.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq., Norwood, Alloa, Clackmannanshire.

Vines.—Any vines upon which the fruit is not colouring well, or upon which the berries are shanking, should have their roots examined. All late varieties should be perfectly ripened by the end of September, and the fruits will keep in good condition for use during the winter and spring. Late crops of Muscat of Alexandria and Gros Colmar develop colour only with difficulty, especially when the border in which they are growing is rich, or cold and wet. This is the case even when the borders have been made up of proper compost for Grape culture. If the roots have extended to the extremity of the borders, and show, when examined, a quantity of soft, thick roots, which are for the most part proceeding down towards the drainage, it will be necessary to check this gross growth. The best manner of doing this is to cut out a trench along the centre of the border, taking away the soil quite down to the bottom of the drainage. Cut away every root that is found there, and refill the trench partly with some of the old soil and partly with new compost, keeping the latter nearest the surface. Make the whole very firm as the work proceeds. Next lift the roots nearest the surface and relay them in fresh loam right up to the front of the vinery wall. This opera-

tion can be successfully carried out every two or three years, and in intervening years 2 or 3 feet width of compost can be added to the borders as the roots extend. This check at the roots at a time when the leaves are still green may cause the latter to flag, and the vinery may require a little shading; but as a result of the treatment the Grapes will improve in colour and quality, and this is especially the case with Gros Colmar.

Peaches and Nectarines.—If young trees have produced gross, soft shoots during the season, it will be necessary to lift them, prune their roots, and afterwards replant them. The sooner this work is done the better, as it is an advantage to the trees if it is done before the leaves fall. Permanent trees also which are growing too strongly should be root-pruned. Cut out a trench along the centre of the border quite down to the base, and cut away all roots, refilling the trench with the same soil, and making it very firm. If Peach and Nectarine trees have to be planted this season, the present time, whilst the leaves are still green, is the best for the operation. Spread out the roots well over the compost, and cover them 4 inches or 5 inches deep with the finer portions of the compost. Do not tie up the young trees much at this stage.

Cucumbers.—Plants now growing in 6-inch pots and that are intended to fruit during winter should be planted out into ridges composed of rich, turfy soil. Some gardeners prefer to keep the plants in pots, just placing them on the top of the ridge, where they will soon root through the hole at the base. Keep the plants growing steadily in a moist atmosphere, so as to have strong, healthy plants before the winter sets in. Spray the plants over with water twice daily, and close the house early in the afternoon. The atmospheric heat may be 80° during the day and 70° at night. If the presence of mildew is detected, dust the leaves with flowers of sulphur. Plants still supplying fruits will require a considerable quantity of water at the roots. Close the house earlier in the afternoon as the days become shorter.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Surrey.

Cattleyas.—Plants of *Cattleya Bowringiana*, *C. Dowiana*, *C. D. aurea*, and the autumn-flowering varieties of *C. labiata* that have completed their growth, should be fully exposed to the light and placed in a position where plenty of fresh air can reach them so that the new pseudo-bulbs and leaves will harden, and thus become capable of withstanding the strain imposed by flowering. The flowers are then likely to become highly coloured and well developed. The plants will require sufficient water to keep their roots moist but not wet until the flowers are open, when the quantity must be gradually lessened. Plants of *C. gigas*, *C. Hardyana*, *C. Warneri*, and *Lælia elegans* as they pass out of flower quickly begin to make a quantity of roots from the newest pseudo-bulbs; therefore if any of these plants require more rooting space, or fresh compost, the operation should be carried out without delay. After repotting, gradually expose the plants to more light and air, and till they have become re-established afford them only sufficient water to prevent much shrivelling. Care must be taken not to keep the compost continually damp, or the plants will recommence to grow instead of resting.

Lælia tenebrosa, *L. purpurata* and its varieties have started well into growth, and may also be repotted if necessary. Cut away all dead and useless back pseudo-bulbs, especially those which have no leaves, and repot the plants into receptacles large enough to afford space that will suffice for two seasons. For small and moderate-sized plants the pots should be made about half full of crocks for drainage, but larger specimens will require more drainage and less potting material. Secure the drainage to the base of the pot with a thin layer of rough sphagnum-moss, and for placing about the roots, good samples of osmunda fibre (two parts), polypodium fibre (two parts) and sphagnum-moss (one part) will be found suitable. These materials should be chopped up and well mixed together, adding sufficient small crocks to keep the compost freely porous. When repotting, keep the rhizome of the plant on a level with the rim of the pot, and press the compost firmly about the roots, and along under the rhizome of the plant, particularly in the centre. While these

Lælias are making their growth they should be placed in a light position in the *Cattleya* house, and be afforded water often enough to keep the few pieces of moss growing on the surface of the compost damp, but carefully avoid over-wetness at any time.

Lælia harpophylla.—Plants of the thin-bulbed *L. harpophylla* that have been in the cool intermediate house during the summer are growing freely, and should be placed at the cool end of the *Cattleya* house, the little extra warmth being conducive to the proper development of the new pseudo-bulbs. The roots will require plenty of moisture until the flowers open, when the quantity should be gradually lessened.

Sophranitis grandiflora.—In the cool house, plants of this species are making good progress with their new growth, and the old roots will be developing new ones. If a plant of this species is in need of repotting, or the compost has become worn out, the present is a good time to attend to these matters. The same kind of compost as is advised above for the *Cattleyas* will also suit this species. I have seen plants of *S. grandiflora* growing far more luxuriantly in the osmunda and polypodium fibres than in the ordinary compost of peat and sphagnum-moss. Such plants which only a few years ago had from a dozen to a score of blooms will in all probability produce from 40 to 60 flowers this season. Elevate the plants well up to the roof glass at the warmer end of the cool house, or in a cool part of the intermediate house, in a position where plenty of fresh air may reach them, but one free from cold draughts. It is necessary to supply the plants freely with water till the flowering season is past, and the growth fully made up, afterwards the supply should be gradually decreased, but at no time must the compost be allowed to become quite dry.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to LORD CLINTON, Bicton, East Devon.

Filberts and Walnuts.—Filberts are now fit to gather, and the nuts, after gathering, should be laid out thinly to dry, turning them over occasionally. In about a month the nuts freed from the husks may be stored in jars in a cool cellar, tying over the tops of the jars with pieces of linen or canvas so as to exclude the air. Walnuts usually require much beating to get them from the tree, and they require a longer time to free themselves from the husks, but after they are dry they may be stored in a similar manner to Filberts.

Autumn-bearing Raspberries.—The warmer weather has changed matters here, and we are now gathering nice fruits of the varieties Four Seasons, Merville Rouge, Everbearing, and even that very late variety, November Abundance, is still bearing. On porous soils a heavy watering would assist the later fruits, and if the present fine weather continues for a few weeks longer, several gatherings will be forthcoming.

Late Peaches.—See that every fruit is fully exposed to the rays of the sun, and afford copious waterings if necessary. Sea Eagle, Late Devonian, Nectarine Peach, Gladstone, Barrington, and Princess of Wales are all excellent varieties, and are developing colour well this season. Golden Eagle is a very late sort, ripening towards the middle of October with us on an east wall, but these late varieties ought to be planted in a southern aspect, so that they will get all the sun possible during the month of September. The fruits also should be fully exposed to the sun quite early in the season if the colour and flavour are to be of the best.

The Grape Vine.—It has been a bad season for the vines to within the last fortnight, but the bunches may possibly mature. Remove any laterals that shade the fruit, and protect the Grapes from birds, wasps, and flies, if this has not already been done. Keep the roots moist during this spell of drought, or the berries will be small.

Mulchings.—These may now be taken away, so that the sun may the better warm the borders containing the roots. Point over the surface soil with the fork, and if too dry, apply a soaking of water which will suffice for some time to come, as the days are getting shorter and the sun less powerful. It is of little use to fork these mulchings into the borders, for after the exposure and rains to which they have been subjected they contain very little nourishment.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq.,
Lastwell Park, Kent.

Freelias.—As soon as these plants start into growth, let the covering material be removed, or the growths will become weakened. Expose them to all the light and air possible, to ensure a sturdy growth, and when the cooler weather sets in remove the plants to a shelf in a light, well-ventilated house. Watering must be done with care, for *Freelias* are very impatient of over-watering, rarely succeeding well if this happens. Apply a neat stake and secure the growth to this as support becomes necessary. The plants require to be kept growing steadily, but at no time must they be subjected to an excessive degree of heat. An atmospheric temperature at night of 50° to 55° is quite sufficient during the winter months.

Solanums.—If the varieties grown for their decorative fruits have been planted out, no time should now be lost before getting them lifted and potted up, cutting round the balls with a sharp spade a week or so previous to lifting them. This will prepare them in a measure for enduring the transplantation without suffering much check. Water the roots thoroughly on the day before lifting is commenced. Take up the plants very carefully, and place them in small pots as they can be conveniently put in, without destroying the roots, as for decorative purposes plants in small pots are most useful. When potted, place the plants in a house or frame (or, if this cannot be done, place them at the foot of a wall facing to the north), shading them heavily and keeping the atmosphere of the frame fairly close and damp during hot days, but exposing the plants at evening. Under this treatment they will quickly recover any check they may sustain, and afterwards they should be placed in a house exposed to the full sunshine, to ripen the fruits. Ventilate freely, and maintain at night an atmospheric temperature of 55 degrees.

Marguerites.—If a good batch of these plants has been grown out-of-doors during the summer, and are now coming into bloom, they will be found useful for arranging with *Salvias* and other bright-coloured flowers. *Marguerites*, being gross feeders, require copious supplies of water when in full growth, with an occasional weak dose of manure-water. Examine the plants carefully each week for the grub or maggot which often infests the leaves of these plants, and pick off all infested leaves and burn them. As cuttings of *Marguerites* will make roots very readily, it is a good plan to have batches of young plants in various stages of growth.

The watering of plants in houses.—At this season, when many plants are ceasing growth for the season, much discretion is necessary in the matter of affording water. One mistake often made is that of drying-off plants suddenly, instead of gradually decreasing the supply of water until it can safely be withheld altogether. Plants that have been growing out of doors on a bed of cool ashes may find the change to inside conditions anything but beneficial, unless means are taken to modify these conditions. If the weather is hot and dry, such plants, after removal indoors, will require to have the stages damped between the pots two or three times each day, and a slight spraying overhead with the syringe in the afternoon will freshen the plants, and in a measure compensate for the drier atmospheric conditions in the glass-house.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow,
Cornwall.

Hardy Cacti.—The soil about these plants should be kept stirred and free from weeds and moss. If the ground has become at all close in texture, remove the surface portion, replace it with some fresh compost, and place freshly-broken pieces of sandstone and charcoal around the plants to absorb superfluous moisture. Any decaying portions of the plants should be entirely removed, and the cut should be made cleanly, for which purpose a sharp knife should be used. A few cuttings of the tender kinds of *Cacti* should be inserted in pots, and be wintered on a dry shelf in a warm plant-house. Examine the portable lights, re-place any glass

that may be broken in them, and, if necessary, give them a coating of paint. As soon as wet weather sets in, place these lights over the plants, but afford the plants an abundance of air on all favourable seasons.

Flower-beds.—It frequently happens in late summer that frosts appear on some nights, and afterwards the weather is again mild. A quantity of some light protective material, such as hessian and tiffany, should be kept ready to place over the beds when frost threatens. A few sticks should be inserted in the beds for the purpose of protecting the plants from injury by the covering. As a rule, the protective material may be laid direct upon carpet bedding plants, which should be the first protected, as they are very tender, and susceptible to injury from a few degrees of frost. In the sub-tropical garden, preparations should also be made to protect from light frosts the more tender Palms, &c. *Cycas revoluta*, if moderately dry at the roots, will withstand much more frost than will *Latanias*.

Budded Roses.—The ligatures should be loosened, removed, or replaced, according as is necessary. Shoots of *Briars* should be considerably shortened.

Transplanting.—If the soil is sufficiently moist for the purpose, the work of lifting and re-planting young shrubs should be proceeded with as soon as circumstances permit. Early transplanting is greatly to be recommended, especially in the case of the evergreen species. The use of strong manure in the soil is not advisable, and any addition to the rooting medium should be such as will favour the formation of roots rather than leaves. If the plants have received attention during their growing period in the matters of pinching and training, no branch pruning will be needed. It is inadvisable, as a rule, when lifting plants, to prune them, but all long, coarse roots should be shortened with a sharp knife. When planting, do so firmly, and allow ample room for each plant to fully develop.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq.,
Cobham Park, Surrey.

Potatoes.—The outlook for the main-crop in this part of the country is unsatisfactory. The plants made good and, to all appearance, a healthy growth in the early part of the season, but they are now all black or leafless through disease, which has already affected the tubers to a very serious extent. Any varieties therefore that are approaching ripeness should be lifted without delay, and, if possible, during the continuance of the good weather which prevails at the time of writing, for should wet weather set in whilst the tubers are still in the ground, the results will be the more disastrous. Great care should be exercised in the picking up of the tubers, and all which are affected with disease should be separated from the sound ones. The care now taken will save much labour during the next month or so, as the tubers will not require the same amount of picking over before they are finally stored. As the work of lifting is proceeding, let the tubers be exposed to the air as much as possible, that they may be perfectly dry before being temporarily stored.

Celery.—Continue to earth up *Celery* as soon as the plants reach a suitable condition, and when they are sufficiently dry. If the plants are dry at the roots, apply a thorough watering between the rows, as soon as the earthing-up has been done. If the *Celery* fly or leaf miner has made an appearance, spray the plants on the under and upper side of the leaves with *Quassia* extract, and afterwards apply a liberal dusting of soot, doing this work early in the morning, while the leaves are still wet with dew. Should this application be washed off by rain during the first week, follow it up with a second dressing at the first opportunity.

Cardoons.—The later plantings should now receive their final blanching, first supporting each plant with a stake, and binding it round with hay-bands. Earth-up with soil in the usual manner.

General work.—If the ground and paths have been kept clear of weeds during the present month, little trouble in this respect will be experienced for some time. Let all accumulations

of rubbish be made into a heap in the yard that is set apart for this purpose, and add to this any refuse that will be removed from the ground during the next fortnight. At the end of a fortnight the heap should be turned over, shaking out all the longest litter, and keeping this in a separate heap for use in the protecting of *Celery*, *Globe Artichokes*, &c., from early frosts, and later on for the making of hot-beds. The first heap will help to provide the winter's demand for manure. Make further plantings of such varieties of *Cabbage Lettuce* as "All the Year Round," and of the *Cos Lettuce* Bath, selecting warm and sunny borders, but bearing in mind that some of these early quarters must be kept for early crops of *Peas*, *Cauliflowers*, *Spinach*, &c., next spring. The ground for the early crops just mentioned must be trenched or otherwise prepared at the first opportunity after the present date.

PUBLIC PARKS AND GARDENS.

By W. W. PETERREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

Distribution of disused bedding plants.—As the time is fast approaching when the summer bedding in the parks must be replaced by spring-flowering plants, the question of how to dispose of the plants now occupying the beds is somewhat opportune. Excepting cases in which the stock now possessed of a particular kind of plant is less than is required, ordinary bedding plants such as *Pelargoniums*, *Calceolarias*, *Pentstemons*, *Heliotropiums* and *Ageratums* are of no value at the end of the season. In private gardens they are often consigned to the rubbish heap, and until recent years the same practice prevailed in public gardens. Now, however, it is customary in most parks to distribute the surplus bedding plants to anyone desirous of having them, rather than destroy them. This annual distribution of plants has in many towns become quite an institution, and very early in the autumn visitors to the park make inquiries as to when the bedding stuff is to be given away. The same people come year after year for plants, a fact which—whether indicating success or failure on their part in growing them cannot be decided—shows how popular this custom has become.

Manner of distribution.—When following the example of other towns in this matter a few years ago, we commenced by making the mistake of giving the plants away at each of the parks and open spaces, and at different dates, so as not to interfere with the regular work. We soon found that this enabled the same people to go from garden to garden and secure more plants than they should expect to obtain, and in this way a fair distribution was rendered impossible. To put a stop to this we now have all surplus plants taken to three different centres of the town, from each of which they are supplied on the same day and during the same hours. Another mistake we made was in giving away the plants as soon as the parks were opened—at 6 a.m.—on the days appointed. The result of this arrangement was that most of the plants got into the hands of children, and were, more or less, destroyed before they reached their homes. Adults arriving after 9 a.m. were greatly disappointed to find that every plant had been cleared away and none left for them. Now that the distribution does not commence until 9 a.m.—by which time most children are in school—the right class of people seem generally to get the plants.

Notice of distribution.—The date of the distribution is published in the local papers a few days before it takes place, and the public turn up in such numbers that they have to be formed up in queues and admitted by batches to the place of distribution, which the applicants enter by one gate and leave by another. A number of men are kept busy giving away the plants as fairly as possible, while the park constables do their best to prevent the greedy ones from getting more than their share.

Effect on trade.—It is sometimes suggested that the free distribution of the disused bedding plants in the manner described is detrimental to the interests of nurserymen. As most of those who avail themselves of this privilege are not in a position to buy plants for their gardens, this suggestion can hardly be correct. The probabilities are that nurserymen get an indirect benefit from the custom, and knowing what a small percentage of the plants given away are actually saved by the recipients, they generally regard the practice with indifference.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return uninvited communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Newspapers. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR OCTOBER.

- TUESDAY, OCTOBER 1—
Roy. Hort. Soc. Coms. meet. Scottish Hort. Assoc. meet. National Amateur Gard. Assoc. meet.
- WEDNESDAY, OCTOBER 2—
Nat. Chrys. Soc. Early Exh. at Crystal Palace (2 days).
- SATURDAY, OCTOBER 5—
Soc. Franc. d'Hort. de Londres meet.
- MONDAY, OCTOBER 14—
United Ben. and Prov. Soc. Com. meet. Nat. Chrys. Soc. Floral Com. meet.
- TUESDAY, OCTOBER 15—
Roy. Hort. Soc. Coms. meet.
- THURSDAY, OCTOBER 17—
Roy. Hort. Soc. Exh. of British-grown Fruit (2 days).
- FRIDAY, OCTOBER 25—Royal Bot. Soc. meet.
- MONDAY, OCTOBER 28—
Nat. Chrys. Soc. Floral Com. meet.
- TUESDAY, OCTOBER 29—
Roy. Hort. Soc. Coms. meet. Brit. Gard. Assoc. Ex. Council meet. Croydon Chrys. Show (2 days).
- WEDNESDAY, OCTOBER 30—
Kent County Chrys. Soc. Exh. at Blackheath (2 days). Streatham and Dist. Hort. Society's Autumn Show (2 days).
- THURSDAY, OCTOBER 31—
West London Hort. Society's Show at Hammersmith.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last fifty years at Greenwich—53° 8'.

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, September 25 (6 P.M.): Max. 82°; Min. 52°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, September 26 (10 A.M.): Bar. 29.7. Temp. 65°. Weather—Dull.

PROVINCES.—Birmingham, September 25 (6 P.M.): Max. 68°; Cambridge. Min. 55°. Scotland W.

SALES FOR THE ENSUING WEEK.

- MONDAY AND WEDNESDAY—
Sale of Dutch Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.
- MONDAY TO FRIDAY—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.
- TUESDAY AND WEDNESDAY—
Annual Sale of Nursery Stock at Sunningdale Nurseries, Windlesham, Surrey, by Protheroe & Morris, at 12.30.
- WEDNESDAY—
Lions and Plants, Bays, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 5.
- FRIDAY—
Orchids in variety at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.15.
- Sale of Surplus Nursery Stock at Warren Nurseries, Upper Tooting, by Protheroe & Morris, at 12.

Plums
and their
Prices.

The exceptional crops of Plums this season have caused much comment. In almost every district the trees have yielded abundantly, so much so that many of the standard trees in the orchards that are not pruned systematically have had their branches broken by such a weight of fruit as they were quite unable to support. During many years' experience, we have never witnessed orchard-grown Plum trees so brilliantly beautiful as they were recently when thus laden with their highly-coloured fruits. The sight was one that should have afforded complete satisfaction to the cultivator, for it showed that he had applied the art of cultivation successfully, and that the results of his

work had not suffered from ungenial climatic conditions that have so frequently proved disastrous heretofore.

But it has to be pointed out that the commercial cultivator is also the seller of his crops, and, illogical though it might seem to those unfamiliar with the circumstances, from the point of view of the seller, such plentiful crops as have ripened this season are not profitable. This is a matter that calls for the earnest consideration of all those who have a lively interest in the industry of fruit culture, the extension of which we have advocated on every possible occasion, in the belief, which we still hold, that it is the best thing that could happen to rural England. It is impossible to withhold sympathy from the grower. His art is directed towards securing heavy crops of high quality, and he is encouraged by all the literature that exists on this question, by lecturers and mentors of every description, to exert himself to the utmost in this laudable work. Occasionally he succeeds so well that the very measure of his success spells failure. He is almost induced to lament a result that he has done so much to attain, mainly because others have succeeded equally well. It is a paradox, but one that should be capable of some explanation. There must surely be something lacking in enterprise or organisation, when a good harvest, such as is contributory to the best interests of the community as a whole, is, nevertheless, incapable of yielding proper remuneration to the producer.

We believe that if the attention of cultivators could be properly focussed upon this subject, and an organised attempt made to remedy the matter, it would be found that the difficulties now experienced are in a large measure the result of an imperfect system of distribution. The presence of an excessive supply of fruit of any kind in a particular market causes a glut, such as is known to be ruinous to the cultivators, and there is every reason to believe that such gluts are permitted to occur in certain markets on occasions when the same fruit is in good demand in other thickly-populated districts, where the supply is less plentiful. In the case of Plums, it will be admitted that commercial crops are not cultivated so commonly as Apple crops. There are many counties where the cultivation of Plums on a commercial basis is scarcely attempted, and it would appear probable that if the country's produce could be distributed equally and expeditiously over the country's whole area, it would sell for remunerative prices, even in such a season as the present. In order to accomplish this it would seem to be essential that the growers themselves should possess correct information as to the demand existing in the various centres of the population, so that the consignments might be sent in the first instance to those in which the demand is greatest. It is a commonplace fact that the London markets attract a greater quantity of fruit than they can dispose of profitably, and, as a consequence, it is often to be purchased from the costers at prices altogether out of proportion to those ruling in many parts of the provinces. This fact was borne out recently by a letter which appeared in a contemporary from a correspondent at Cardiff, who complained that in that city

Plums of good quality could not be purchased at the retail establishments at less than three-pence per pound. Yet during the same week we had reason to know that excellent samples of the variety *Victoria* were sold in London in the wholesale markets at two shillings per bushel of sixty pounds, whilst inferior produce realised only half that sum per bushel. Kentish Plum cultivators may not all have been aware that the whole of the Principality of Wales may be said to be dependent for their Plums upon the produce obtained from English counties. We know of some instances of Plum orchards in Wales, but their aggregate production bears but little relation to the demand. It may freely be admitted that in recent years the art of distribution has been greatly developed by such men as Mr. George Monro and others, but much remains still to be done. It is for the cultivators to determine whether the work can be best accomplished by an association of salesmen or by an association of growers. In either case there should be representatives in every industrial centre, and it should be the business of these agents to collect information as to the demand which is found to exist in their locality, and to furnish frequent reports upon the prices which consignments may be expected to realise there. The chief centre might reasonably be situated in London, and from this bureau it should be possible for fruit growers to obtain the latest information by means of telephonic or telegraphic messages. An annual fee payable by all the members would probably suffice to defray the cost of the collection and dissemination of the reports. Plums being of a quickly perishable nature, it would be advantageous if, for instance, consignments from Kent could be sent to Lancashire or other northern markets without the need of passing through a London market, whilst the cultivator would be satisfied that they were being sent to a centre where the best prices could be realised.

In this connection it may be pointed out that, although the prices obtained by the growers may suffer very considerably owing to the presence of a glut in the market where the fruit is first "dumped," it by no means follows that such fruit will be sold cheaply to the consumers. Much of it is the more likely to be subsequently distributed to districts where scarcity is present rather than a glut, and the final prices realised therefore have very little resemblance to those paid in the first instance to the growers.

It is conceivable that, even were an organisation established similar to that we have suggested, some difficulty might arise unless the central bureau had power to determine the distribution; because, when all the growers possessed the information as to the locality where the highest prices were ruling, so many would send their fruits there as to cause the very kind of glut it is desirable to prevent. These are questions, however, for the growers or the salesmen to determine, for although our propositions are offered as nothing more than suggestions, at the same time there can scarcely be two opinions as to the need for an organised scheme of some description. It may be objected that a glut of Plums is an infrequent occurrence, and that any systematised attempt to prevent it



Photograph by John Gregory.

SPECIMEN OF LAELIO-CATTELYA ELEGANS, WITH THIRTY FLOWER-SPIKES AND TWO HUNDRED AND THIRTY FLOWERS,
FROM MAJOR HOLFORD'S COLLECTION AT WESTONBIRT, GLOUCESTERSHIRE.

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would thus be unduly costly, and, indeed, hardly justifiable. In this connection, the obvious retort would be that there are frequent gluts of one kind or another, and the system that succeeded in preventing loss to the growers through an abundant Plum crop would also be of equal service in the presence

well advised if he keeps his area under Plum trees somewhat restricted, and takes care to have the major part of his orchards cropped with Apples. In private gardens something may be done in the way of pruning the trees, and in thinning the blossoms or fruit to prevent the Plum trees becoming so laden one

at the present moment of *The Book of Fruit-bottling*, by Miss Edith Bradley and Miss May Crooke, that in yet another way cultivators have it in their power to make better use of an over-crop of soft fruits than allowing them to waste upon the land. The larger growers might find it to their advantage to



FIG. 101.—*LOMATIA FERRUGINEA*: COLOUR OF FLOWERS BROWNISH-RED.

A, Side and apex of flower, showing the four sepals $\times 4$; B, Longitudinal section showing separating sepal $\times 4$; C, Stamen $\times 4$; D, Ovary, style, and basal glands, with tip of stigma above $\times 4$; E, Pollen $\times 400$.

(See also Supplementary Illustration, and text on p. 234.)

of other gluts of small fruits, Apples, Potatoes, or similar marketable produce.

Apart from the question of distribution, the fruit cultivator, knowing that Plums are a very uncertain crop, and likely to be over-plentiful or scarce in a particular season, is

season as to render them unable to produce a satisfactory crop in the following year, but this is scarcely practicable in the case of large orchards which are cultivated for commercial purposes.

We are, however, reminded by the receipt

erect a factory on their own land where the surplus fruits of any kind might be made into jam, or be preserved by bottling in a form that, when used in the winter months, the fruits have almost, or quite, the same qualities as they possessed when gathered from

the trees. The smaller growers could co-operate for the same purpose, and have their factories at convenient distances, just as on many parts of the Continent creameries are established on the co-operative plan for the making of butter. Selected fruits would be necessary for use in bottling, and the remainder, if perfectly sound, would serve for the making of jam.

One or all of these methods, or better ones, if they are forthcoming, should be employed if they are necessary to prevent waste in a season of plenty. We fear that the practices at present in use are as unsatisfactory as they are unscientific.

OUR SUPPLEMENTARY ILLUSTRATION.—By the courtesy of Earl ANNESLEY we are enabled to illustrate *Lomatia ferruginea* as a shrub growing in the gardens at Castlewellan, Co. Down, and at fig. 101 a spray of flowers with details of a single flower. Respecting its culture at Castlewellan, his lordship's gardener, Mr. RYAN, writes us as follows: "Plants of this very handsome Chilean shrub have been cultivated in the pleasure grounds at Castlewellan during the past 18 years, and they have not suffered the least injury even in the severest winters. The species is, therefore, hardier than it was at first supposed to be, for in most gardening books it is described as a plant for the greenhouse or conservatory. It has flowered here for several seasons past, but the flowers are much hidden by the luxuriant pinnate foliage. This season the specimens have flowered most profusely. They grow very vigorously in a mixture of fibrous peat, loam, and old, well-decayed manure, thoroughly mixed together. In planting we make large holes 5 or 6 feet in diameter, and 4 feet deep, which we fill in with the above compost, the *Lomatia* being a very gross-feeding plant. Lord ANNESLEY bought the plants on the Continent as *Lomatia pinnatifolia*, under which name it was grown here for many years, but the Kew authorities have stated its correct name to be *L. ferruginea*. Some of the specimens in the grounds at Castlewellan are 12 feet in height and 35 feet in circumference."

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees of this Society will take place on Tuesday, October 1, in the Society's hall, Vincent Square, Westminster. In the afternoon a lecture on "Electric Cultivation in Relation to Horticulture" will be given by Mr. B. H. THWAITE.

SCHOOL-GARDEN PRODUCE AT OXFORD.—An exhibition of produce, grown on the school gardens under the Oxfordshire Education Committee, was held on September 19th, at the County Hall. The exhibits, some 650 in number, were arranged in two divisions: (1), school gardens; (2), trial allotment productions; and they comprised 14 and 20 classes of vegetables respectively. Additional exhibits of flowers, fruits, and grafted Apple and Pear trees were also sent by some of the boys. The awards were made as follows: Allotment produce, Mr. W. HOWELL, formerly gardener to the late G. H. MORRELL, Esq.; School exhibits, Mr. J. S. CHIDLOW, gardener to Mrs. HERBERT MORRELL, Headington Hill Hall. Mr. P. Elford, the secretary of the Oxford Educational Committee, in announcing the result of the exhibition, said the three winners in the trial allotment competition were so nearly equal, that whilst Bicester, as gaining the highest total, was awarded the cup, Charlbury would receive a silver, and Crowmarsh a bronze medal. During the afternoon some 200 of the boys attended a lecture on the subject of successional sowings, given by the horticultural instructor, Mr. HEATON.

SOUTH-EASTERN AGRICULTURAL COLLEGE.

—In connection with the garden produce, poultry and honey competitions of the Kent County Council and of the National Potato Society, at the South-Eastern Agricultural College, Wye, Kent, on Wednesday, October 2, we are asked to remind our readers that a conference will be held, when an address will be given by the Principal, Mr. M. J. R. DUNSTAN, to be followed by discussion. Those wishing to attend are asked to send their names to the Principal of the College.

YORK GALA JUBILEE, 1908.—The exhibition of 1908 will form the 50th in succession, and in celebration of the Jubilee show, the management is offering the sum of 1,000 guineas in prize money. Four gold medals are offered for nurserymen for non-competitive exhibits, and the judges will be empowered to award a special prize of a jubilee gold medal to the exhibit they may consider the best and most attractive in general arrangement, and most calculated to awaken the interest of visitors. Prizes of a total value of £100, including a first prize of £40, are offered in an open class, called the Jubilee Commemorative Class "A," for a display of plants and flowers grouped for effect but not exceeding 30 feet in length by 14 feet in depth. Important prizes are also offered for a display of horticultural produce, including plants; flowers and fruits; and for bulbous and allied plants and cut flowers, associated with any kinds of retarded plants. A first prize of £10 is offered for the best decorated table of ripe fruit. The secretary is Mr. FRED. AREY, Davyhall Chambers, Davygate, York.

DR. GUSTAVE HOSTERMANN.—The post of Professor of Botany and Sections President for Plant Physiology in the research institution at the Royal Gardeners' College at Dahlem, recently vacant owing to the death of Dr. KARL MULLER, is now filled by Dr. GUSTAVE HOSTERMANN, until recently assistant at the Botanical Institute of the Agricultural Academy at Bonn-Poppelsdorf.

AGRICULTURAL DEVELOPMENT IN PAPUA (NEW GUINEA).—British New Guinea having passed into the possession of the Australian Commonwealth, the Australian authorities have drawn up a scheme for the agricultural and mineral development of the country. Mr. STANFORTH SMITH has been appointed Director of Agriculture, Mines, and Public Works, and on his way to take up his appointment was interviewed in Ceylon by the *Ceylon Observer*. He stated that for the last 20 years British New Guinea (or Papua as it is now called) has been governed as a Crown colony, and during that time excellent work has been accomplished in converting the natives along the coasts from cannibalistic and head-hunting savages to peaceful and law-abiding subjects. Magisterial districts have been carried out all along the southern and eastern littoral, and in these the white settlers' lives and property are perfectly safe. The natives have not only ceased their tribal fights and the manufacture of warlike weapons, but have even given up the weapons they possessed. The system of native government has been excellent in the past, and this policy will be maintained in the future. The territory of Papua having now been transferred to the Commonwealth, we feel, said Mr. SMITH, that the time is ripe for enlarging the function of government by an active policy of industrial development that will bring us more in line with our progressive neighbours. We have millions of acres of rich, well drained alluvial soils right on the coast, and just as healthy for Europeans as other lands in the same latitude. These lands are covered with scrub and forest. The soil is excellently suited for the cultivation of rubber, coconuts, and sugar, while the fertile tablelands further inland are well fitted for the cultivation of coffee, tea, cinchona, and cocoa.

HOLLY LODGE, HIGHGATE.—This interesting old residence, with its beautiful grounds and gardens, which has been announced for sale by public auction on October 24, has often been referred to in these columns. Holly Lodge will be ever associated with the memory of the late Baroness BURDETT COULTS, for the gatherings held there in the mid-Victorian period included most of the notable personages of the time. The grounds have a certain old-time appearance and they contain many stately trees. Some of the lawns are so enclosed by trees and shrubs, yet afford such pretty views, that the visitor can scarcely realise the situation is so near to the metropolis, for the distance from Charing Cross is less than five miles. Rhododendron bushes of unusually large dimensions are to be found in various portions of the estate, and when these are in flower, as we saw them on a recent visit, they are productive of such floral effects as could hardly be expected in a London suburb. There are also extensive fruit and vegetable gardens attached to the place. The gardens and pleasure grounds have long been under the care of Mr. JESSE WILLARD, who is well known as a member of the Fruit and Vegetable Committee of the Royal Horticultural Society. An illustration of Holly Lodge was published in the *Gardeners' Chronicle* for August 21, 1886.

PLANT BREEDING IN SWEDEN.—The Swedish Seed-breeding Association aims at an essential improvement of agriculture in Sweden by means of the "systematic raising of new and better sorts of plants." The untiring labours of this society since 1886 are now annually producing results which indisputably show that the right and practical course is being pursued. Its principal establishment at Svalöf, in Skane, is already widely known in and out of Europe, and is annually visited by numerous foreign students. The new varieties of seeds are, moreover, widely cultivated throughout Sweden, and are also beginning to attract attention in other countries. The establishment is fully equipped with the latest resources of science, and it was founded exclusively for the purpose of improving the common agricultural crops.

A JAPANESE NURSERY FIRM.—Mr. ALFRED UNGER, the sole proprietor of the firm of L. BOEHMER & Co., Yokohama, celebrated on July 24 last the 25 years' existence of the firm, there being present on this occasion the employees of the firm, besides 200 Japanese purveyors. The founder, Herr LOUIS BOEHMER, went to Japan in 1871, having been engaged by the Government as adviser in horticultural matters. BOEHMER, during his ten years of connection with the Government, introduced numerous sorts and varieties of fruits from America and Europe, and studied the possibilities of a development of the trade in the gardening products of Japan. He founded the nursery in 1882 on the spot where it is now existing. The manager of the Japanese section and chief buyer was UHEI SUZUKI, the present president of the Yokohama Nursery Co. The business assumed from the first such dimensions that BOEHMER was unable to control it, and in 1889 UNGER was engaged in Germany. About 18 years ago he proceeded to Japan, going a few months later to the Riukiu Island, where he arranged for the shipment of large numbers of Cycas trunks. Soon afterwards SUZUKI left the firm and founded the Yokohama Gardeners' Association, and MASSA SUZUKI took over his duties. In 1892 Herr UNGER became a partner, and in 1896 he became, on the death of BOEHMER, the sole proprietor of the firm. The export business increased from year to year, and the owner has made many journeys to Europe and America, in order to increase his business connections.

HORTICULTURE IN THE TRANSVAAL.—We learn from the *Transvaal Agricultural Journal* for July last that interest in fruit-growing is maintained, but that the increase in the area of land under fruit trees was not large, the chief extension being in Citrus fruits. This is regrettable, as the amount of money sent out of the Colony each year for fruit that could quite well be produced there is very considerable. Last year the imports of fruit of all kinds, including jams and preserves, were valued at £260,018, which for a small population like that

that country. The regulations framed under Ordinance No. 16 of 1904 to prevent the introduction and spread of insect pests and diseases of plants, are stated to be working well on the whole, though they require amending in certain particulars. One of the features of the year was the success which attended the collection of Citrus fruits forwarded by the Division of Horticulture to the Royal Horticultural Society's exhibition in London in June last. The fruits, which arrived in splendid condition, attracted great attention. The secretary of the Royal Hor-

MANURES FOR FRUIT AND OTHER TREES.—A practical handbook on this subject for the use of gardeners and students, by Dr. A. B. GRIFFITHS, will shortly be published by Mr. ROBERT SUTTON.

ARTHROPODIUM CIRRHATUM.—It is well to call attention to species of plants once common in gardens, but which in the course of years have become rare. *Arthropodium cirrhatum* is one of these. It was introduced in 1821 from New Zealand, and belongs to the natural order Liliaceæ. The roots are not bulbous, but fleshy, and the plant in consequence, says B. OTHMER in *Die Gärtenwelt* for August 31, requires no thorough drying off in the winter season. The leaves are sword-like, long, somewhat channelled, slightly hairy, and elegantly pendulous. The small, white flowers appear in the late spring time, a period when flowering plants are scarce, and they are borne on many-branched spikes. The strongly-developed anthers and the pale reddish-violet pollen and the stigma contrast pleasingly with each other. As a decorative greenhouse plant and for furnishing blooms for cutting, the plant deserves wider cultivation. It requires a rich, porous, loamy soil, and a considerable quantity of root-moisture during the period of active growth, supplemented by manure-water.

PEAT AS PACKING MATERIAL FOR FRUIT AND SEEDS.—According to the *Blättern für Obstbau und Gemüsebau*, Professor Dr. SCHWEINFURT has written as follows: "The peat of the North appears to be called on to play a great rôle in trade with tropical countries. The hygienic advantages, from its freedom from bacteria of this excellent raw material, ensure for it manifold uses. As packing material for parts of plants containing much sap and for fruits, the finer parts of peat are likely to find many uses in moist as in arid localities in the tropics, in preserving these from decay and mildew during transit, that the fruits throughout were not changed in the least degree and appeared as if gathered only yesterday." When Oranges and Citrons were sent by post packed in ordinary cross-handled baskets, such as are commonly used in the trade, lined on the outside with packing canvas, the fruit packed separately in tissue paper and surrounded with dry peat packed about them firmly, the fruit arrived in good condition at Togo, although in this case, for lack of postal communication with the Mediterranean ports, the package had to be sent from Palermo via Hamburg.

POISONING BY "MUSHROOMS."

THE occasional fatal accidents that occur through mistaking the deadly *Agaricus (Amanita) phalloides* for the common Mushroom render it desirable that the characters that distinguish the poisonous from the edible species should be more generally known.

The most obvious distinction consists in the white gills of the poisonous agaric, as contrasted with the pink ones of the wholesome Mushroom. In the latter the gills are pink, changing to a dark brown or black colour as the cap expands and matures.

Other less easily remembered differences consist in the bulbous base, and in the shape of the gills, which are broadest in their middle and do not adhere to the stem, in the case of *A. phalloides*, whilst the stem itself in the latter species becomes hollow as it develops.

The poisonous plant is very common in woods at this season of the year, and it is a sound practice to regard all "Mushrooms" growing in woods with suspicion, and although some delicious edible species grow in these localities, they should be avoided by all who have not a thorough knowledge of this class of plants.

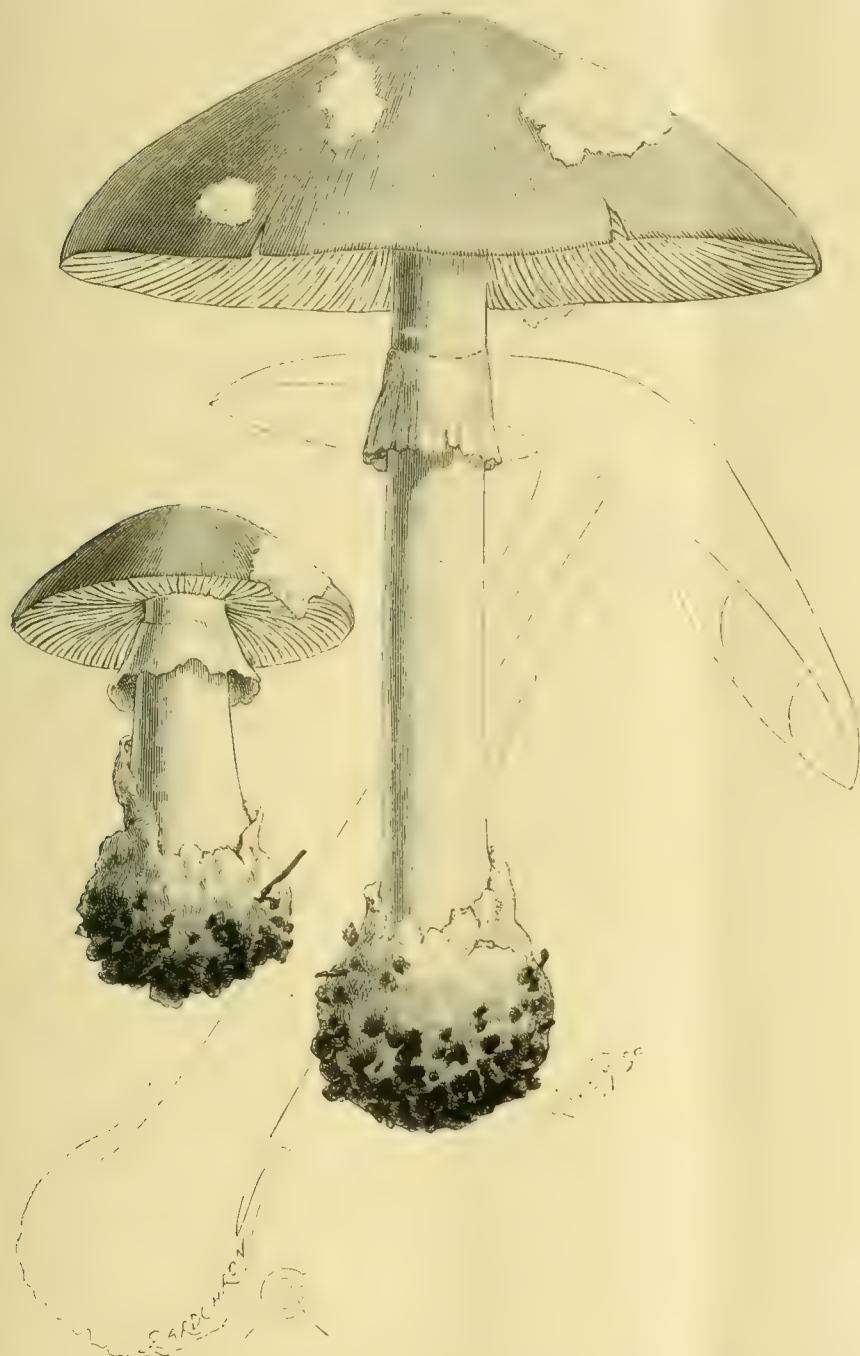


FIG. 102.—*AGARICUS (AMANITA) PHALLOIDES*: A POISONOUS MUSHROOM-LIKE FUNGUS.

of the Transvaal is a very large sum. Another unsatisfactory feature connected with fruit-growing in the Colony is the lack of enterprise on the part of the local nurserymen. So far, nearly the whole of the fruit trees and vines planted in the Colony have been obtained from Cape Colony or Natal, or from abroad. From experience gained on the nurseries connected with the various experimental orchards, it has been conclusively proved that good trees—better than many of those imported—can be raised in

ticultural Society wrote to the Transvaal authorities as follows: "There is doubtless a great future open to your produce, provided (1) that quality is maintained in size, colour, consistency, flavour, &c.; (2) that quantity is approximate to the demand; and (3) that the retail price is not a fancy one. We badly need Citrus fruits all the summer through, and our Lemon supply often falls short. It is inadvisable to send any but the best, and not too great a variety at first."

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

HYDRANGEA HORTENSIA IN TUBS.—I enclose a photograph (not reproduced) of a specimen of *Hydrangea Hortensia* growing in a tub, and which has 300 fully-expanded blooms, and others in bud. The spread of the plant measures 8 feet. Another specimen in these gardens is carrying 210 inflorescences. The plants received the protection of a shed through the severe weather. Liquid manure has been applied to the roots twice a week throughout the summer. W. F. Hamilton, *Pylewell Park Gardens, Lymington, Hants.*

HORTICULTURE IN THE WEST RIDING (YORKSHIRE).—It may be of interest to those living in other districts to know something of the horticultural training and teaching adopted here. Horticulture is considered of great importance in the education of children, and not only has it a place on the curriculum of many schools, but also it is taken a step further and is introduced into the evening or continuation schools. The school teacher, crammed as he is already with a fairly heavy load of learning, has had perforce to add to his store that of (practical?) horticulture in order to keep up his recognised standard of efficiency. This, doubtless, the teacher does his best to impart in his own way, or perhaps that of the text-book, to the scholars under his charge. One wonders what the average school teacher would do were a pair of secateurs placed in his hands, and he was asked to prune a plot of Gooseberry bushes. However, this department of horticultural teaching may perhaps be left in safety to work out its own results, and no one will be any the worse for it, but rather the better, if the teachers are able to create in young minds a love for nature. The practical gardener will not so much mind the day-school teacher airing his knowledge of horticulture to the children, but it cannot strike him as otherwise than ludicrous for his apprentice, anxious to add scientific knowledge to that of practical experience in attending evening classes in horticulture, to find he is being taught by an elementary school teacher. Yet this is the case as it stands to-day. To be officially recognised as qualified teachers of horticulture these teachers attend a course of lectures at the Council's experimental farm, and are thereafter considered competent to teach practical horticulture. At the examination, which it may be presumed they have to pass, no external candidates are allowed to sit, and as the classes are held during the day on the Saturday, what chance is there for the practical gardener to take the course and thereby become "officially recognised" as a qualified teacher of his profession? He may, in addition to his having been in the garden from his youth, have passed the R.H.S. and the Board of Education examinations in the practical and scientific elements of both horticulture and agriculture, yet he is debarred from teaching. Why the County Council have adopted such a scheme is not known. Doubtless they have some reason for supplying in this way the knowledge which it takes a gardener practically all his life to learn, but surely the results must be very inadequate and misleading to a number of pupils in evening classes who have natural abilities and an inclination in the direction of horticulture. H. L.

THE "WILBERFORCE" AND "PITT" OAKS.

Not far distant from Bromley in Kent is the beautiful and historic property of Holwood, one of the residences of Earl Derby. Here are two venerable and interesting Oaks, the Pitt and Wilberforce, the latter conspicuous for its gnarled and projecting root, on which two men sat one day earnestly conversing about one of the most iniquitous systems that cursed the human race. The two men were William Pitt and William Wilberforce, each determined to do his utmost to bring about the abolition of the Slave Act. The following note with reference to this episode is extracted from Mr. Wilberforce's diary of the year 1788:—"At length I well remember after a conversation with Mr. Pitt in the open air at the root of an old tree at Holwood, just above the steep descent into the vale of Keston, I resolved to give notice on a fit occasion in the House of

Commons of my intention to bring forward the abolition of the slave trade." These words are engraved on a stone chair which Earl Stanhope had set up close to this historic tree in 1862, by the permission of Lord Cranworth, who then owned the estate. The stem of this tree is 18 feet in girth, the height under 50 feet, and the spread of branches a little more than that of the height. The centre was hollow, but is now filled up and neatly covered in with lead, while the roots on the lower side extend to about 12 feet in length above ground, thus affording a convenient seat for the weary traveller or hard-worked politician. In 1889 the writer had this tree surrounded by an iron fence, while the larger branches were bound together, the cost being £51. The eminently historic "Pitt's" Oak stands within a stone's throw of Holwood House, and will, should no accident befall it, live for many years to perpetuate the memory of the great statesman. It was Mr. Pitt's habit to sit and read beneath the spreading branches of this stately Oak. The tree stands on a mound, part of an old encampment, the dimensions being as follow:—At a yard from the ground level the stem girths 20 feet 1 inch, and at 8 feet it divides into four massive limbs, the largest of which girths 9 feet 6 inches and 9 feet 4 inches at 2 feet from point of junction with the main stem. The stem is hollow, and in order to prevent the heavy branches being torn away during stormy weather, they have been strengthened by the aid of well-concealed iron bands. A. D. W.

SEPTEMBER STRAWBERRIES.—Referring to the note on p. 217, I have found Laxton's Perpetual and Vicomtesse Héricart de Thury succeed better here as autumn-fruiting Strawberries than do either St. Joseph or St. Antoine de Padoue, and I have discontinued growing these latter varieties. Laxton's Perpetual and Vicomtesse Héricart de Thury are bearing good crops of large fruits here at the present date, and if the bright, dry weather continues, they will yield fruits throughout October. The present season has been much more favourable than last year for autumn-fruiting Strawberries; frequent showers and absence of hot sunshine in July and August have kept the foliage healthy and vigorous, and growth has continued all through the season. W. H. Divers, *Belvoir Castle Gardens, Grantham, September 21.*

HORTICULTURAL RETURNS.—The series of events which led up to the passing of the Injurious Insects and Pests Act should have convinced fruit-growers that it is only by persistent efforts on the part of themselves and their friends that they are likely to obtain a proper recognition of their requirements from the Board of Agriculture. That such legislation was necessary was prominently recommended by the Fruit Committee, but that recommendation was shelved till the efforts of private individuals forced the Board into action. It is the same with all the other recommendations of this committee, even in cases where their adoption involved no legislation and no expenditure. Amongst those recommendations which were the most simple to adopt was one for the improvement of the returns of land under fruit. Such returns are not merely a matter of interest to the curious, but may often be of much practical importance. It was only a few months ago that the Board of Agriculture experienced the need of such returns in the case of Gooseberry plantations, and they, who should have been in possession of these returns, and who could alone get them, applied helplessly for them to the county authorities, who had not got them, and who never pretended to collect them. Probably in consequence of a letter which appeared in the *Journal of Horticulture*, the Board have now made some alteration in the form of the returns, but, unfortunately, it is an alteration which will only make matters worse instead of better. In these forms there are 28 headings under which farm crops are entered. One of these (No. 22) is for small fruit, but there is none for other fruits—at any rate, in the body of the returns. If this other fruit is in grass, it simply figures under the heading of Permanent Grass (No. 27); if it is in cultivated land, it is entered as Bare Fallow (No. 24). The recent alteration applies to the small fruit, which is now sub-divided into—(a) Strawberries, (b) Raspberries, (c) Currants and Gooseberries, (d)

other kinds. Why Currants and Gooseberries should be lumped together, it is impossible to see, especially in view of the recent experience of the Board as to the want of statistics for Gooseberries alone; the data for Black Currants should also be separated from those for Red Currants, and would give valuable information as to the effect which the ravages of the mite have produced on this branch of the fruit industry. That the acreage under such separate headings is too insignificant for separate entry cannot be contended, for we find separate headings (and main headings too) for such things as Flax and Chicory, of which the total production in the kingdom is measured by two or three hundred and two or three score of acres respectively. Although fruit other than small fruit is not entered under the main headings, information respecting it is asked for under "Special Enquiries." This in itself is highly objectionable, as was admitted by Mr. Rew, the head of the statistical department of the Board, before the Committee; for we get a double entry of fruit land, once under "Grass" or "Fallow," and again under the special enquiries about "Orchards." Orchards, it may be remarked, presumably include fruit plantations in cultivated soil; but this is not stated, as it should be. Under the heading of Orchards five sub-headings have now been introduced:—(a) Apples, (b) Pears, (c) Cherries, (d) Plums, (e) other fruits. So far, this is a step in the right direction; but the instructions accompanying it are such as to render it absolutely futile. These instructions are: "Mixed orchards containing more of one sort of tree than another should be entered against the sort to which the larger proportion of the trees belong. Where the sorts are equally mixed, the entry should be made against 'Other kinds.'" This forcibly suggests the story of a certain well-known scientific man who was trying to find out what railway tickets were required for his pets: "Please, sir, the stationmaster says that cats is dogs, and rabbits is dogs, but that there tortoise is a hinsec." If a grower has a plantation of 500 Apples, 500 Pears, and 501 Plums, his Apples are Plums and his Pears are Plums; but if the one additional Plum dies, all his trees become "other fruits," or if two Plums and one Apple die, they all become Pears. It is impossible to conceive of any system better calculated to produce thoroughly worthless returns; the Apple-growing in the kingdom will become grossly exaggerated, and Pear cultivation will appear to be almost non-existent. It must have taken the Board a long time to elaborate such a masterpiece of topsy-turvydom. It is hard to see what the difficulties in dealing with mixed plantations are. Surely a man who has got sufficient brains to grow, say, 10 acres of fruit, will have brains enough to estimate roughly how many of these 10 acres are occupied by the various fruits which he grows; and, however faulty his estimate may be, it will certainly be nearer the truth than if he puts down his Apples as being Pears, or his Cherries as Plums. When Mr. Rew was under examination, I submitted to him a scheme of returns to which neither he nor any members of the committee could see any objection. The scheme was simply to have one entry for fruit amongst the main agricultural returns, thus avoiding the pernicious system of double entry now in existence, and to have this entry divided under two main headings of—A, Fruit in grass; and B, Fruit in cultivated land. Under A and B there would be sub-headings for details similar to those now existing. Under A, we should have Apples, Pears, Plums, Cherries, other fruits—total, so-and-so; under B, Apples, Pears, Plums, Cherries, Strawberries, Raspberries, Red and White Currants, Black Currants, Gooseberries, other fruits—total, so-and-so; and if the grower found himself incapable of giving the details, he could enter the totals only. In collecting statistics it is highly important to make as few changes as possible, so that the continuity of the records may not be destroyed. The adoption of the plan here described would not destroy the continuity with previous records, as it simply introduces more detail into the records. Under the system introduced by the Board this year, whereby fruits are called "out of their name," this continuity is effectually destroyed, and it is earnestly to be hoped, therefore, that it will be abandoned without delay. *Spencer Pickering.*

SOCIETIES.

ROYAL HORTICULTURAL.
Scientific Committee.

SEPT. 17.—*President*: Mr. J. T. Bennett-Poë, M.A., V.M.H. (in the chair); Dr. A. B. Rendle, Messrs. H. J. Veitch, J. Douglas, H. T. Güssow, A. O. Walker, G. Gordon, G. S. Saunders, and F. J. Chittenden (hon. sec.).

Runner Bean fl. var. colour.—Mr. CUMBERBISON wrote concerning the Runner Beans similar in flower-colour to those of the "Butterfly" Bean shown by Mr. WORSLEY at the last meeting, that Herr BENARY, the introducer of that Bean, informed him that it was found as a sport among Painted Lady Runners some five or six years ago, and by careful selection it was fixed. Herr BENARY had never made any crossings between red and white Runner Beans, and could not, therefore, say what the result of such crossing would be likely to be.

Hybrid between Pear and Quince.—Mr. VEITCH showed fruit from two trees raised from seed, the result of a cross made by J. Seden in 1895, between the Pear Bergamotte Espereuse ♀ and the Portugal Quince ♂. The seeds were both obtained from one fruit, and it was seen that whilst one of the seedlings was very similar to the Pear, the other much more resembled the Quince. The fruits were immature, so that the flavour could not be tested. Mr. VEITCH, however, promised to send further specimens if they should ripen.

Double Aster.—Mr. VEITCH also showed flowers of a double Aster sp. (Michaelmas Daisy).

Leaf diseases.—Mr. A. O. WALKER showed leaves of *Clerodendron trichotomum* with brown spots, and remarked upon the prevalence of leaf diseases during the past season, with particular reference to the death of Black Currant leaves. This the committee thought was probably due to the fungus *Gleosporium ribis*, which had been particularly prevalent during the past season. Mr. WALKER said that he found young trees free of the disease, while older trees were badly affected.

Potato disease.—Mr. GUSSOW showed specimens of tubers of Potato badly attacked by a disease, having something of the appearance of a bad attack of "scab." He found, however, that the appearance was not associated with any of the fungi which had been previously observed in Holland and in Ireland. The present specimens came from Lincoln. The scabby spots have an olive green tint when the spores are still attached to the rind of the Potato, but the spores frequently become detached and are left in the soil. The organism appears to be unable to grow in any but an acid medium.

Red-fleshed Pear.—Mr. E. BURRELL, of Claremont Gardens, Esher, sent Pears having the flesh of a deep red colour, with the following note: "A Pear I take to be 'Sanguinole,' with several synonyms, among which is Parkinson's 'Blood-red Pear,' a variety said to have been grown in France over 350 years ago. The tree from which the specimens exhibited were taken is a standard between 15 feet and 20 feet in height growing in a garden at Claygate, Surrey. The tree has the appearance of having been twice 'worked.' The Pear is naturally of no value in these days, but is of interest on account of its rarity."

Carrot Malformed.—Mr. E. STONE sent from Hayes, Kent, a curiously malformed Carrot, which had a mass of ten roots of somewhat small size springing from the base of the crown, but joined together at that end for a short distance. One of the thickest roots appeared to have been injured or checked in growth in its early stages, and this had perhaps induced the curious formation.

Dark-red-fleshed Peach.—Mr. W. A. CAREY sent a Peach gathered from a tree raised from seed by himself, the stone having come from one of the varieties (name unknown) commonly grown outdoors. Mr. CAREY stated that when ripe the fruit was of very good flavour, but differed from other commonly grown Peaches in the remarkable colour, which was black until a few days before the fruit was ripe, when it gradually became lighter till it was a deep red colour. The fruit agreed well in its characters with that described in French works under the name

"Sanguinole," and known in this country as "Blood Peach," and it is curious that that variety (or something very nearly approaching it) should have been raised from the stone of an ordinary Peach.

NATIONAL ROSE.

SEPTEMBER 24.—The autumn show of this flourishing society was held on Tuesday last in the Royal Horticultural Hall, Vincent Square, Westminster. The exhibition must be accounted a record, both for the extent and the quality of the exhibits. The entries far exceeded those in number of any of the preceding shows of the society held at this season, and many of the blooms were equal to those displayed at the summer show. The grand weather of the past few weeks has favoured the Rose, and remarkable clearness of petal was seen in the blooms, especially in those exhibited by Scottish growers. The amateur classes were well represented, but generally the standard of quality in this section was much below that seen in the trade classes. Non-competitive exhibits were excluded from the show, but notwithstanding this fact the Hall was filled, even in the two annexes. Very large exhibits were shown in the nurserymen's classes for groups of Roses, and these were staged by the walls around the whole length of the building. New varieties of merit were not plentiful, the best being a hybrid perpetual named Avoca, shown by the famous Newtownwards firm of Messrs. ALEX. DICKSON & SONS.

NURSERYMEN'S CLASSES.

BLOOMS SHOWN ON BOARDS.

In the important class for 36 blooms of distinct varieties, a splendid competition resulted, no fewer than nine exhibits being staged. The quality was remarkably good throughout, and the judges had no light task in apportioning the prizes. The blooms, however, shown by Messrs. J. COCKER & SON, Aberdeen, N.B., were slightly the best, and the 1st prize was accordingly awarded to this exhibitor. A list of the varieties in the premier exhibit included:—Dr. Andry, Mrs. E. Mawley (a beautiful, large bloom), J. B. Clark, Caroline Testout, Marie Baumann, Mrs. W. J. Grant (excellent in colouring, and with a magnificent centre), M. E. Verrier, Alfred Colomb, Marchioness of Londonderry, La France de '89 (of remarkable colouring and substance of petal), Dean Hole, Her Majesty, S. M. Rodocanachi, Comte de Raimbaud, Mrs. T. Roosevelt, Florence Pemberton, J. Piganeau, Duke of Edinburgh, Helen Keller, A. K. Williams, Mildred Grant (a flower of great size, and delicately flushed with pink), Annie Wood, Bessie Brown, Charles Lefebvre (of satiny plum colour), Frau Karl Druschki, Horace Vernet, Princess Marie Merchensky, Pharisæer, Lady Suffield, Earl of Dufferin, Helene Guillot, General Jacqueminot, Mad. Delville, Gustave Gunnerwald, Duc de Rohan, and Hugh Dickson.

2nd, Messrs. ADAM & CRAIGMILE, Aberdeen, who had S. M. Rodocanachi, Hugh Dickson, La France de '89, Oscar Cordel, Chas. J. Grahame, John Stuart Mills, Annie Woods, and Mrs. W. J. Grant, especially fine.

3rd, Messrs. D. & W. CROLL, Dundee.

Best 12 Blooms.—*Three distinct varieties of Tea and Noisette Roses*.—Remarkable refinement characterised the flowers in the exhibits of this class. Messrs. J. COCKER & SONS, Aberdeen, contributed a magnificent stand of well-developed flowers, showing very little injury in the outer petals, and to these the 1st prize was awarded in competition with six other competitors. The 2nd prize also fell to an Aberdeen firm, Messrs. ADAM & CRAIGMILE, and the 3rd to Messrs. D. PRIOR & SON, Colchester.

The premier blooms were Mrs. Edward Mawley (of remarkable size), Mad. Hoste, F. von Marschall, Mad. Vermorel, Mad. Henri Berger, Mad. Jules Gravereaux, Maman Cochet, The Bride (excellent of form), Souvenir d'Elise Vardon, Medea, Bridesmaid, Souvenir de S. A. Prince, Muriel Graham (a flower of perfect finish), Golden Gate, Boadicea, Souvenir de Pierre Notting, Lady Roberts, and Mad. de Watteville. Notable flowers shown by Messrs. ADAM & CRAIGMILE were those of Souvenir de Pierre Notting, Luciole, Mad. Hoste, Rubens, Enchantress, and Mad. Cusin, the last-named especially notable for its fine colouring.

ROSES IN VASES.

A very considerable contribution to the exhibition was made by the exhibits in the class for 36 distinct varieties of Roses shown in trusses. The schedule stipulated that no exhibit should occupy a greater area than one measuring 8 feet by 5 feet: any receptacle was allowed for the staging of the blooms, but in all cases—none the flowers were displayed in vases. The exhibits required two long tables down the centre of the building for their accommodation, and collectively they made a grand display.

The general style of staging was on tiers, forming a pyramid, and this obtained in the 1st prize collection shown by Messrs. FRANK CANT & Co., Colchester. Quality of flowers was undoubtedly the deciding factor in making the award, for the blooms were all excellent, and arranged in big bunches without overcrowding. Notable vases were those containing the varieties White Maman Cochet, Hugh Dickson, Mad. Antoine Marie, Lady Wenlock, Irish Elegance (a single variety), Lady Ashtown (a pink-coloured H.T. of great beauty), Mad. Melaine Souper (a very beautiful Rose), Dean Hole, Ards Pillar (rich red), and Kaiserin Augusta Victoria. The 2nd prize was won by Mr. JOHN MATTOCK, New Headington, Oxford, with an exhibit very little inferior to that shown by Messrs. CANT, and having a similar arrangement. Hugh Dickson, Mrs. J. Laing, Mrs. Edward Mawley, G. Nabonnand, Boadicea, Frau Karl Druschki, La Tosca, and White Maman Cochet may be enumerated as the best examples in the 1st prize exhibit. 3rd, Messrs. PAUL & SONS, The Old Nurseries, Cheshunt.

Passive distinct varieties in bunches of seven blooms.—There were six exhibits seen in this class, and the flowers shown by Messrs. COCKER & SONS, were immeasurably above all the others in point of quality; indeed, they constituted one of the features of the exhibition. In size, colouring and form they were alike good, and it was difficult to select a variety as being weaker than another. Perhaps the finest was that containing the variety J. B. Clark, a Rose renowned for its richness of colouring, although its neighbours, Hugh Dickson, Bessie Brown, and Dean Hole appeared almost equally perfect. Other varieties were Gladys Harkness, Dr. Andry, Comte de Raimbaud, Frau Karl Druschki, Alfred Colomb, A. K. Williams, Countess of Derby, and Mrs. John Laing. 2nd, Mr. HUGH DICKSON, Belfast. The outer petals of some of the flowers showed injury, but the varieties Hugh Dickson and Mrs. Stewart Clark were very fine. 3rd, Messrs. G. and W. H. BURCH, Peterborough.

One vase of any Rose, twelve blooms.—The winning variety was Frau Karl Druschki, shown by Messrs. D. & W. CROLL, Dundee. 2nd, White Maman Cochet, shown by Messrs. D. PRIOR & SON, Colchester.

DECORATIVE ROSES.

All exhibits in the classes for these Roses were to be shown so as to present as far as possible the foliage and habit of growth of the variety exhibited. H.P., H.T., T., and Noisette Roses were excluded.

The most important class was that for 24 distinct varieties, in trusses containing not fewer than three nor more than seven blooms, but the response was poor, for only three exhibits were staged, the best by Messrs. FRANK CANT & Co., Colchester; 2nd, Mr. JOHN MATTOCK, Oxford. Messrs. CANT displayed their vases in a pyramidal manner on tiers, their best variety being Gustave Regis.

Provision was made for a similar, but smaller class for 12 varieties only, and here the best flowers were shown by Messrs. W. & R. FERGUSON, Dunfermline, and they were followed by Messrs. G. & W. BURCH, Peterborough.

The class following was also for 12 distinct varieties of decorative Roses, to be arranged in bamboo stands provided by the Society. Mr. JOHN MATTOCK, Oxford, won the first prize for creditable blooms of Bardon Job, William Allen Richardson, Dorothy Perkins, Irish Elegance, G. Nabonnand, Gruss an Teplitz, and other well-known varieties. 2nd, Messrs. J. JEFFERIES & SONS, Cirencester.

DWARF POLYANTHA OR POMPON ROSES.

The schedule called for 12 distinct varieties, each of six trusses. Five exhibitors responded, and of these the most successful was the Colchester firm of Messrs. FRANK CANT & Co., who showed the varieties Mrs. Cutbush, Anna Marie de Montravel (white), Perle d'Or, White Pet, &c. 2nd, Mr. C. TURNER, Slough; 3rd, Mr. JOHN MATTOCK.

ROSE HIPS.

Last year a new class was provided for a collection of nine distinct species or varieties of Roses in fruit, shown with foliage. Apparently the season is too early for the best colour-effects in the fruits, for we have seen much brighter and prettier hips than those displayed. They were interesting, however, as representing the diversity to be seen in the fruits of Roses, for some were spiny, some almost black, others yellow, &c. The 1st prize was awarded to Messrs. GEORGE PAUL & SONS, Cheshunt, for fruits of *R. rugosa*, *R. pomifera*, *R. macrophylla*, *R. altaica*, &c. 2nd, Messrs. F. CANT & Co., for a collection principally of varieties of *R. rugosa*; 3rd, Mr. JOHN MATTOCK.



FIG. 103.—CLIMBING ROSE MRS. F. W. FLIGHT; FLOWERS BRIGHT PINK:

GROUPS OF ROSES.

Rarely have we seen better exhibits of large groups of Roses than those at this exhibition. Not only was the quality good, but an improvement was noticed in the manner of staging the flowers, and the group shown by Messrs. HOBBS, LTD., may be specially mentioned in this connection.

Only one exhibitor contested the class for a representative group of Roses placed on the floor in an area measuring 100 square feet, and this was the well-known firm of Messrs. PAUL & SON, Cheshunt. Although they were without rivals, no one could justly challenge their claim to the 1st prize, which included a Gold Medal, for the exhibit was one of the highest quality, and staged in such a pleasing manner as to evoke much admiration. Small pails on dwarf stands were filled with choice blooms of the best kinds, and interspersed were Ferns and other suitable greenery. Mad. J. Dupuy was charming, and mention must also be made of the varieties Ben Cant and Edu Meyer, the latter a new hybrid Tea variety. George Laing Paul, a new Hybrid Perpetual variety of rose colouring, and Perpetual Thalia are also worthy of mention.

There were two other classes for groups of Roses, but displayed on tabling, and the condi-

tions were similar in both classes, with the exception that the one was for a group not exceeding 100 square feet in space, and the other 60 square feet. Six exhibits were shown in the larger class, and half that number in the smaller one.

Messrs. HOBBS, LTD., Dereham, won in the class for an exhibit on 100 square feet, with a beautiful display of popular kinds, arranged with artistic skill, bowers with suspended baskets of Roses, very pleasing. 2nd, Mr. GEO. PRINCE, Oxford; 3rd, Messrs. GUNN & SON, Olton.

Mr. F. M. BRADLEY, Church Street, Peterborough, won the 1st prize in the smaller class, with blooms of best quality, arranged principally on single bamboo rods, that were cut at intervals for the reception of one or more blooms. We may enumerate Frau Karl Druschki, Caroline Testout, Comte de Raimband, Captain Haywood, and Ben Cant as being especially well shown in this exhibit. 2nd, Messrs. W. SPOONER & SON, Woking; 3rd, Messrs. R. HARKNESS & Co., Hitchin.

AMATEURS' CLASSES.

The amateur classes were well contested, but

DECORATIVE CLASSES.

The best bowl of China Roses in the open classes was shown by Mr. GEO. PRINCE, Longworth, the variety being Queen Mab, a charming flower of bronzy-rose shading.

Miss LANGTON, Raymead, Hendon, had the best decorated dinner-table, the best bowls of cut Roses in classes 27 and 28, and the best basket of cut Roses.

GOLD MEDAL ROSE.

Rose Avoca.—A Gold Medal was awarded this new variety, shown by Messrs. ALEX. DICKSON & SONS, LTD., Newtownards, Co. Down. It is a hybrid perpetual variety, with rich crimson flowers shaded with purple.

MEDAL ROSES.

Six Medals were offered for the best blooms in the show, three for amateur exhibitors and three in the classes for nurserymen. The winners were as follows:—Amateurs: Rev. J. B. SHACKLE, for Frau Karl Druschki, H.P.; Mr. O. G. ORPEN, for Bessie Brown, H.T.; Mr. R. BOSWELL, for Maman Cochet, T. Nurserymen: D. & W. CROLL, for John Stuart Mill, H.P.; J. COCKER & SON, for La France de '89, H.T.; J. JEFFERIES & SON, for Madame Lambard, T.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

SEPTEMBER 19.—Committee present: E. Ashworth, Esq. (Chairman); and Messrs. A. Warburton, R. Ashworth, L. A. Ward, W. Thompson, P. Smith, W. Stevens, C. Parker, A. J. Keeling, W. B. Upjohn, J. C. Cowan, F. W. Ashton, Jas. Walmsley, and P. Weathers, hon. sec. This meeting was held after an interval of seven weeks, and a fairly good display of plants was seen. A group of Orchids was exhibited by W. THOMPSON, Esq., Stone (gr. Mr. Stevens), and the plants were all of Cypripediums. Particularly noticeable was a fine plant of *C. x Maudiae* var. *magnificum*, bearing five flowers. Other good plants in the group were *C. x Lord Derby* and *C. x Shillingtonum*, the latter well grown and flowered (Bronze Medal.)

Messrs. MOORE & Co., LTD., Rawdon, near Leeds, obtained a Silver Medal for a group of miscellaneous plants which included hybrid *Laelias*, Cypripediums, and forms of *Odontoglossum* in variety. Cypripedium *x* *Leander*, var. *magnificum*, in this group was given an Award of Merit.

Messrs. KEELING & SONS, Westgate Hill, Bradford, were awarded a Bronze Medal for a group, including plants of *Miltonia x Binoti* and Cypripedium *x* *Bella*, the latter a charming hybrid between *C. laevigatum* and *C. x vexillarium*, both of which obtained Awards of Merit.

G. W. JESSOP, Esq., Rawdon, near Leeds, received an Award of Merit for *Cattleya x Iris*, var. *delicata*.

A. WARBURTON, Esq., Haslingden (gr. Mr. Dalgleish), exhibited Cypripedium *x* *Memnon*, *Closes Hall* var., and *C. x Edwardii*, var. *superbum*. An Award of Merit was granted to the last-named variety.

E. ROGERSON, Esq., West Didsbury (gr. Mr. Price), exhibited Cypripedium *x* *Rose*, a hybrid between *C. Spicerianum* and *C. x T. B. Haywood*, and to which an Award of Merit was granted.

Mr. W. BOLTON, Wilderspool, Warrington, obtained a First-Class Certificate for Cypripedium *x* *Rachel* var. *Bertha*, a richly-coloured hybrid between *C. Charlesworthii* and *C. Curtisii*, undoubtedly one of the best productions yet seen from *C. Charlesworthii*. P. W.

BRITISH GARDENERS' ASSOCIATION.

SEPTEMBER 17.—At the last meeting of this association held on the above date, Mr. Chas. Foster presided, and six new members were elected, bringing the total up to 1,101 since the beginning. One candidate was rejected.

—On September 18 a meeting was held at Newport, Mon., and was addressed by the secretary. He pointed out that almost every class of workers in the kingdom had been organised, and that professional gardeners were practically the only ones who had not banded themselves

the exhibitors were generally southern growers, and the blooms appeared inferior to the magnificent specimens from Scotland in the nurserymen's classes.

The best 18 blooms of distinct varieties were put up by Rev. J. H. PEMBERTON, Havering Atte-Bower, his best flowers being those named after Mildred Grant, Ben Cant, Mad. Charles Crapelet, and Duchess of Bedford. 2nd, Mr. R. F. HOBBS, Thorneclough, Worcester.

In the smaller class for 12 blooms, Mr. W. O. TIMES, Hitchin, was awarded the 1st prize, and Mr. G. SPEIGHT, Market Harboro', the 2nd prize. This last-named exhibitor had a beautiful bloom of the variety *C. Lefebvre*. Twelve exhibitors contested in this class.

Mr. G. MOULES, Bedford Road, Hitchin, was 1st in the class for nine blooms, and Mr. W. S. CHAPMAN, Warminster, Wilts, was 1st in the class for six blooms.

The best Tea and Noisette Roses in the amateur section were shown by Mr. CONWAY JONES, Hucclecote, Gloucester, with Veyral Hermanos, White Maman Cochet, Medea, Comtesse de Nadaillac, Sylph, &c. 2nd, Mrs. FORTESCUE, Dropmore, Maidenhead.

Mr. W. LEGGETT, Colchester, excelled in the class for six varieties of exhibition Roses shown in vases.

together for mutual benefit until the B.G.A. was founded. Even now many were afraid for some reason or another to join and seemed to be under the impression that the B.G.A. was a revolutionary society. It was nothing of the kind. It did not even profess to be a trade union in the ordinary sense of the term, but it did hope to make gardeners see that they had a right to better wages and better treatment than they generally received. Gardening was a business, and not the luxury that some people repeatedly asserted with parrot-like monotony. If a luxury, that was precisely the reason gardeners who were skilled in their profession should be liberally, instead of niggardly, paid for the services they rendered. The B.G.A. did not in the least wish to interfere between employer and employé, but it did wish the employer to recognise that the gardener, by whose ability his gardens were kept in perfect order, was a vastly more important member of society than the individual who swept the streets for a few hours per day, and was often paid 50 per cent. more for his class of work than the gardener was for his. It was pointed out that, so far as gardeners in private situations were concerned, it was a difficult problem for the B.G.A. to interfere in the regulation of wages and hours of labour. All that could be done was to advise every gardener taking a situation to have the terms of his employment set forth in a business-like manner in black and white, and to endeavour to secure remuneration in accordance with his ability and experience. A good gardener was always worth a good wage, as he was a more economical manager, and produced better results than the unskilled workman. A very lively discussion took place, and several present promised to join the association, but no branch was formed. The chair was taken by Mr. Powell, gardener to Col. Wallis. / H.

WOOLHOPE NATURALISTS' FIELD CLUB.

AUGUST 29.—At a meeting of the Woolhope Naturalists' Field Club on the above date, at Hampton Court, a paper was read by Mr. Walter E. Collinge, M.Sc., F.E.S., University of Birmingham, on "Useful and Injurious Insects," from which we make the following extracts:—

Ever since man cultivated certain plants either for purposes of food, clothing, decoration, &c., we know that they were attacked by diseases, very many of which were caused by insects. At the present day this subject is recognised and carefully studied by all thoughtful and far-seeing people who are interested in plant life, but it is only within comparatively recent years that the subject of Economic Entomology has received the attention that so important a study demands and merits. Indeed, we in this country are far behind many others, and not until we more fully realise that our field and garden crops suffer to the extent of from 25 to 75 per cent. of their value by the attacks of insects, that our live stock are seriously impaired, that stored grain, timber, and other products of great commercial importance are seriously injured, and that we ourselves are suffering from diseases disseminated by insects, will the subject receive the thorough attention it deserves.

In order to successfully combat these pests, it is necessary that we should know something about them, their habits, methods of attack, where they live, their migrations, when they appear, and why they become destructive. Without this knowledge it is almost useless to expect any good results from the steps we take to destroy or hold them in check. With a full knowledge it is often possible to devise simple means for checking them or stamping them out almost entirely, or even to prevent their coming. In almost every civilised country except our own the subject is being entered into with energy and enthusiasm, with what results all who are interested in agriculture and horticulture here know only too well. It is only by long and patient study that we can arrive at proper conclusions respecting the value of those insects which are termed useful, and the seriousness of the harm done by those termed injurious. It has been estimated by Dr. Howard that of the three hundred families into which we can divide the different orders of insects, 113 are beneficial, 116 injurious, and 71 both or undetermined.

Insects are useful as destroyers of other injurious insects and noxious plants, in the pollination of plants, in destroying dead and decomposing matter; they are also used as food by man and other mammals, birds, amphibians, and fishes; they are employed in clothing; and, finally, are used in various ways in arts and commerce. It is as destroyers of injurious insects that I wish to bring before you their useful side. The subject of insect enemies of insects is now one of the greatest importance. In the United States of America it has received a large amount of attention; insectaries have been established and many harmful insects—particularly Scale insects—held in check or almost eradicated.

The results that have been achieved in America are little short of marvellous, and read more like a fairy tale than the sober facts of science. One by one the original home of different injurious insects has been run down, and its natural insect enemy or enemies discovered. These latter have then been shipped to Washington, bred, and distributed, with the result that some of the worst pests have been held in check, whilst in certain districts they have been almost exterminated. In the Californian fruit-growing district the well-known Cottony Cushion Scale (*Icerya purchasi*) has been held in check by a small Australian Ladybird (*Vedalia cardinalis*). Before the introduction of this small beetle the citrus industry of California was threatened. In a like manner various aphids, the Black Scale, Mealy Bugs, Red "Spider," the Tent Caterpillar, the Cabbage Butterfly, and many other insect pests have been attacked. So successful has this method proved, that a member of the Californian State Commission of Horticulture recently stated: "This method has been found so effective that we have now very few really troublesome orchard pests, the worst at the present time being the Codling Moth, and for this we hope to find a natural check."

In California the method employed has been as follows: An endeavour is made to trace back the course travelled over by the pest, and to trace them to their native country; there the remedy is to be found. Whether this is a parasitic or a predaceous insect, or both, as sometimes happens, it is secured, introduced into the insectary, and bred with care. It soon becomes acclimatised in its new home, and as the species propagates itself it is sent out into those sections of the country where the pest it attacks is most prevalent. So effective has this work of introducing beneficial insects and encouraging native parasites been, that in California it has been found possible to reduce all the worst of the Scale insects and very many other injurious species, so that they are no longer a source of serious danger.

Turning next to a consideration of those species which are injurious, we may group them under four headings, viz.: (1) Those that are concerned in the destruction of plant life; (2) those that are concerned in the destruction of stored goods; (3) those that are concerned in injury to live stock; and (4) those that are concerned in injury to man.

The loss that injurious insects inflict upon our crops and forests is enormous. Many years ago Dr. Riley estimated the average damage to crops in the United States at nearly £60,000,000 per annum. In this country it is no unusual thing to find injury to the extent of 25 to 50 per cent. of the crop, whilst in other cases the loss is even more serious. Curtis records that in 1786 the Turnip crop in Devonshire suffered to the extent of £100,000 owing to the injury caused by insects, and about the same time the Turnip Sawfly destroyed thousands of acres of Turnips in Norfolk. In 1881 the Turnip Flea Beetle did damage to the extent of half a million sterling in this country, and in 1882 the Hop Aphid caused a loss of over a million and a half sterling. These cases might be multiplied to almost any extent, although most of us are aware of the seriousness of the situation. With the advance that has been made in our knowledge of the life history of the different species and the improvement in our methods of attack, there is every reason to expect that the farmer and fruit grower will suffer less if he takes advantage of the known preventive and remedial measures.

Conspicuous among remedial methods is the practice of spraying. It is no longer an experi-

ment; the practice of thousands of growers in this and other countries has clearly and conclusively demonstrated its value, so that it is becoming a regular part of the farm operations of the successful farmer and fruit grower. In this connection it is most important to remember that syringing or squirting a liquid upon a tree is not spraying. The fluid must be broken up into a fine mist; further, it must be "a limpid liquid so prepared and maintained that it is free from all solid or semi-solid particles that can obstruct the easy passage of the liquid through the small orifices of the spraying machine. A spray fluid ceases to be a spray fluid the moment it becomes contaminated."

Thanks to recent experiment and research it is now possible to destroy by spraying the eggs of most insects, and what is now termed winter spraying will undoubtedly become as common a practice as ploughing or manuring.

The injury occasioned to man by insects has during the past few years received special attention in view of their great importance as carriers of disease. Recent research has shown that such diseases as typhoid fever, anthrax, plague, cholera, enteric fever, &c., are disseminated by certain insects, whilst gnats or mosquitos convey from man to man the parasites which give rise to such diseases as malaria, yellow fever, sleeping sickness, filariasis, &c.

One of the chief agencies in carrying disease-causing organisms from infected to uninfected animals is the common House-fly, and it does not seem unlikely that ere long our Departments of Public Health in all our large towns and cities will take this matter in hand with a view to preventing the wholesale breeding of these pests.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending September 21, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The weather was again almost entirely rainless, and generally very bright, but a good deal of mist or fog prevailed in places during the early morning. A little rain occurred during the earlier days of the week in the far N. and N.W., and slight drizzle at some eastern and south eastern stations on Saturday.

The temperature exceeded the average except in England S., the divergence being 2° or more in many British districts, and more than 8° 5' in Ireland. The highest of the maxima were registered on rather irregular dates, but mostly about the middle of the week in England and Scotland, and on Friday in Ireland. In England S. the thermometer rose to 76°, and in most of the other districts to 75° or 74°. In Scotland W. the highest was 71°. The lowest of the minima, which were generally recorded early in the week, ranged from 34° in England S.W. (at Llangunnarch Wells), and 35° in Scotland E. to 45° in Ireland N., and to 46° in the English Channel. The lowest gross readings reported were 28° at Crathes, 30° at Balmoral, and 29° at Llangunnarch Wells.

The mean temperature of the sea.—The warmth of the water did not, as a rule, differ much from that of the preceding week; at Aberdeen, however, there was an increase of 2·8°, and at Eastbourne a decrease of 1·1°. The actual figures ranged from 49·4° at Lerwick and 51·4° at Wick to 60·6° at Seaheld, 61·6° at Eastbourne, and 61·8° at Margate.

The rainfall.—Over the kingdom generally the week was rainless.

The bright sunshine exceeded the average in all districts except Scotland W. and Ireland N. The percentage of the possible duration ranged from 75° in the English Channel, 63° in England S.W., 62° in England S., and 60° in England E. to 31° in Scotland W., and to 29° in Scotland N. and Ireland N.

THE WEATHER IN WEST HERTS.

Week ending September 25.

One very warm day and two very cold nights.—On the warmest day of the past week the temperature in the thermometer screen rose to 78°—making this the warmest day as yet recorded here during the present year. On the other hand two nights proved almost equally cold, the thermometer exposed on the lawn on these two nights indicating respectively 6° and 5° of frost, both very low readings for so early in the autumn. The range in temperature during the week was very large, and on one day the difference between the lowest and highest readings in the thermometer screen amounted to as much as 38°, which has only once before been exceeded here in September during the past 21 years. At 2 feet deep the ground is now 1° warmer, and at 1 foot deep 2° warmer, than is seasonable. No rain has fallen for 15 days, and no rain-water at all has passed through either of the percolation gauges for three days. Notwithstanding that one day proved sunless, the record of bright sunshine for the week averaged nearly 7½ hours a day, or more than three hours a day longer than is usual at this season. The atmosphere again continued unusually calm. The mean amount of moisture in the air at three o'clock in the afternoon fell short of a seasonable quantity for that hour by as much as 12 per cent. The two frosts above referred to do not appear to have done any injury to my single Dahlias, which are at the present time flowering as freely as ever. E. M., Berkhamsted, September 25, 1907.

CATALOGUES RECEIVED.

MISCELLANEOUS.

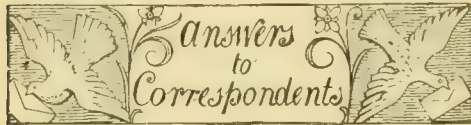
W. PAUL & SONS, Waltham Cross, Herts.—Roses.
R. WALLACE & CO., Kilnfield Gardens, Colchester.—Lilies, Hardy Plants and Bulbs.
THOS. RIVERS & SONS, Sawbridgeworth, Herts.—Fruit Trees, Roses and Shrubs.
HUGH LOW & CO., Bush Hill Park Nurseries. Carnations: Greenhouse, New Holland and Stove Plants: Fruit Trees and Roses.

FOREIGN.

CHAS. SPRENGER, Naples, Vomero, Italy.—Interesting lists of new and rare plants, including species hardy at Naples; also trees and shrubs.

SCHEDULE RECEIVED.

THE WINTER-FLOWERING CARNATION SOCIETY'S third exhibition, to be held in the Royal Botanic Gardens, Regent's Park, London, on Wednesday, December 11, 1907. Hon. Secretary, Mr. Hayward Mathias, Lucerne, Stubbington, Farnham, Hants.



* * * The Editor will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for forming Supplementary Illustrations to this Journal.

ADDRESS: E. J. We fail to trace the address of the nursery firm you mention.

BEGONIA: F. S. Your Begonias appear to be suffering from the attack of some species of anthracnose on the veins, but hitherto no fructification, or certain evidence, can be discovered. You might, perhaps, use a diluted form of fungicide without injury. In any case it will be advisable to remove all diseased plants from the neighbourhood of the healthy ones.

BOOK: T. B. We have no knowledge of a work such as you require, but you will find the subject referred to in the larger books on gardening practices.

BURNING BUSH: T. L., Jr. We suspect you mean the species *Dictamnus Fraxinella*.

CARNATIONS DISEASED: Miss P. The plants are affected with a fungus disease—*Helminthosporium echinulatum*. Spray the plants with potassium sulphide, and destroy by burning any leaves that show traces of disease.

CELERY DISEASED: T. H. H. Your plant is very badly affected with the Celery spot mould *Cercospora Aspi*. Dig up and burn all the diseased plants and spray the healthy ones with a solution of permanganate of potash, which may possibly prevent the further spread of the disease.

CHESTNUT TRUNK: J. T. S. Your Chestnut tree is now suffering from the iron staples driven into its trunk. Hence some wound parasite has found an entrance, and produced a kind of gummosis of a harder and more resinous kind than that found on Plum and Cherry trees. At present we have not been able to determine the fungus, but efforts are being made by cultures. There is no hope of saving the tree, as the trunk is affected; had it been a branch, that might have been lopped off and the wound cicatrised.

FUNGUS ON PEAR LEAVES: Pear Leaves. The leaves are suffering from an attack of the fungus known as *Roestelia cancellata*, but at present in an imperfect condition. The disease has been known in this country for at least 100 years (see *Gardeners' Chronicle*, 1862, p. 689), it is figured in Cooke's *Pests of Cultivated Plants*, p. 122, Pl. x., fig. 8. Latterly it has been suggested that the teleutospores, or final spores, are developed on *Juniperus Sabinae*, and in that condition the fungus is known as *Gymnosporangium Sabinae*.

GLADIOLI: Amateur. When potting up the corms mix a small quantity of well-decayed cow manure with the soil. For a stimulant during the season of growth dissolve a little Peruvian Guano in water, and apply weak doses twice or

three times each week after the pots have become nicely filled with roots. It is not necessary to choose special corms for culture in pots; firm, well-ripened corms that would be selected for culture out of doors are those required. The plants you mention have been obtained at various times during the last few years from the nurserymen. The various sections of Gladioli, Gandavensis, Lemoinei and Nanceianus have been inter-crossed so much during recent years that it is almost hopeless to try to classify them at the present time. You can obtain flowering corms capable of producing flowers equal to those you mention from any good nurseryman. In catalogues they are described as follows: Gladiolus hybrids or seedlings, mixtures to colour, pink and rose shades; scarlet and red shades, and so on; Lemoinei Hybrids, Childsii, Canadian Gladioli, &c.

GRAPE LADY DOWNES: D. Y. R. The shrivelled appearance is not due to a fungus disease but to an insufficient warmth in the vinery to enable the berries to ripen properly. In the great conservatory at Chiswick this Grape always presented a shrivelled appearance, similar to those you send, towards the close of the season, and this was due to planting the vine on the colder side of the house. You will notice the under portions of the berries near to the stalk are quite green. The variety requires a long period to perfectly ripen.

GRAPES TURNING BLACK IN THE STALKS: C. G. The trouble is due to shanking. See reply to G. H. on p. 224 in the last issue.

INSECTS ON PEAR LEAVES: H. C. Smith. The insect known in France as "Le Tigre" is, we believe, the *Tingis pyri*. This insect has a wide distribution in Europe, and is recognised as a pest in Italy. The specimens submitted to us are all effete skins of the immature stages and in a very imperfect state of preservation, but we think that they belong to the above named species. It belongs to the family of plant bugs, but we believe that it has not been recorded from Great Britain. Can you send us some perfect examples of the insect?

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. Correspondents not answered in one issue are requested to be so good as to consult the following numbers.

FRUITS: C. W. T. King Harry.—C. G. B. 1, Peach Dymond; 2, Beurré Clairgeau.—J. D. Irish Peach.—G. S. Franklin's Golden Pippin.—T. W. C. 1, Fondante de Cuerne; 2, Black Worcester; 3, Doyenné Gris; 4, Broom Park; 5, White Nonpareil.—J. W. S. The Pear is the variety Forelle. Apples: 1, Irish Peach; 2, Lord Derby; 3, Sheep's Nose; 4, Tower of Glamis; 5, Not recognised; 6, Ecklinville Seedling.—E. L. 1, Beurré Sterckmans; 2, William's Bon Chrétien; 3, Beurré Bosc; 4, Beurré d'Amulis; 5, Souvenir du Congrès; 6, Bellisier d'Hiver.—Cheuton Hill. 1, Pond's Seedling; 2, Victoria; 3, not recognised; 4, Denniston's Superb.—D. W. Not recognised; you should have sent two fruits at least, and a shoot with foliage.—J. G. Probably Pond's Seedling; you should have sent some foliage with the fruits.—A. J. C. 1, William's Bon Chrétien; 2, Decayed; 3, Marie Louise d'Uccle; 4, Marie Louise; 5, General Todleben.—J. B. 1, Decayed; 2, Bellegarde; 3, Sea Eagle; 4, Barrington; 5, Victoria.

PLANTS: W. D. M. *Jasminum humile*.—W. G. *Verbascum Blattaria*.—F. T. *Boutylon*. 1, *Polygonum cuspidatum*; 2, *P. tomentosum*; 3, *Cichorium Intybus*; 4, *Collomia grandiflora*; 5, *Aster Linosyris*; 6, *Eryngium tripartitum*.—J. T. *Phacelia tanacetifolia*.—T. B. B. *Rhamnus Alaternus*.—T. B. The specimen appears

to be a species of *Prunus*, but do please send something more than a couple of shrivelled leaves. If there are no flowers or fruit a leafy branch would help.—W. O. 1 and 2, *Thuja gigantea*; 3 and 4, *Picea sitchensis*: the cones are also of *P. sitchensis*.—H. Mousley. 1, *Pyrus Sorbus*; 2, *Phillyrea media*; 3, *Juniperus virginiana viridis*; 4, *Lonicera japonica aureoreticulata*.—A. B. *Acanthopanax spinosum* (syn. *Aralia pentaphylla*).—J. H. B. 1, no flowers, probably *Lonicera involucrata*; 2, *Spiraea Douglasii*; 3, *Berberis vulgaris*; 4, *Claytonia sibirica*; 5, *Epilobium angustifolium*; 6, *Chlorophytum elatum variegatum*.—H. C. *Statice sinuata*.—X. Certain of your specimens are numbered, others are not. 1, *Statice macrophylla*; 2, *Centranthus rubra*; 3, *Agrostemma coronaria*; 4, send when in flower. Two others that are unnumbered are *Veronica* sp. and *Solidago canadensis*. The fruits are unnumbered, and it is therefore impossible to deal with them. You have not sent any letter or even initials.—H. S. *Rubus phoenicolasius*; 2, not recognised; 3, *Chrysanthemum uliginosum*; 4, *Helianthus rigidus*; 5, *Potamogeton natans*.—W. A. S. *Colutea arborescens*; *Bladder Senna*.—P. T. *Empetrum nigrum*.—Constant Reader. 1, *Begonia incarnata*; 2, *Begonia Louise Closin*; 3, *Begonia Mrs. Anna Low*. Florists' varieties of *Fuchsias* we cannot name.—V. M. 1, *Oncidium caesium*; 2, *Brassia Lawrenceana*; 3, *Gongora galeata*.—L. H. 1, *Aster Acris*; 1, *Chrysanthemum uliginosum*; 3 and 4, varieties of *Aster Amellus*.—D. 1, *Tecoma jasminoides*; 2, *Salvia* sp.; 3, *Abutilon megapotamicum*; 4, *Begonia discolor* (Evansiana); 5, *Woodwardia radicans*; 6, *Pteris arguta*.—A. A. F. 1, *Adiantum hispidulum*; 2, *Adiantum formosum*.—W. H. *Heeria rosea* syn. *Heterocentron mexicanum*.

PURPLE ELDER: R. Manson. The shoot sent seems to us quite distinct from any Elder in commerce. It is decidedly ornamental and will, we think, be a valuable acquisition to coloured-leaved shrubs.

RHODODENDRONS: Amateur. A mixture of peat, leaf-mould and sand is the most suitable compost for your plant. You can mix a little loam with this, if you are sure it contains no lime. See that the boxes are provided with holes at the base to allow the water to escape, and place plenty of crocks or other drainage material over these holes to keep them free from soil. Neglect in this direction would soon cause the soil to become too wet, and thus have the effect of killing the roots of the plant.

SWEET PEAS: Amateur. Sweet Peas are scarcely suitable for cultivation in window-boxes; as a rule these are shallow, containing no great quantity of soil, whereas Sweet Peas are deep-rooting plants and gross feeders. Thus the plant food contained in the soil of the boxes would soon be exhausted. It is, however, possible to cultivate them successfully in tubs.

TWELVE ORNAMENTAL FOLIAGE PLANTS FOR THE DECORATION OF A TABLE: A. P. The first six might be as follows:—*Cocos Weddelliana*, *Pandanus Veitchii*, *Aralia Veitchii* gracillima, *Codiaeum* (Croton), a fine leaved variety such as *Countess*, elegantissima, &c., *Cordylina* (Dracæna), a narrow leaved variety, and *Phoenix Roebelinii*. To complete the dozen you might select *Geonoma gracilis*, a *Codiaeum*, *Cordylina*, *Grevillea robusta*, a choice Fern, and *Kentia Fosteriana*.

TWIN APPLES: W. B. These are not uncommon; we frequently receive specimens during the fruit season. The abnormality is the result of a fusion of two flowers. An illustration of a "double Apple" is given in the *Gardeners' Chronicle*, October 20, 1855, p. 692.

VINE LEAVES: F. S. There is no disease of the leaves or berries. Some external circumstances have caused the leaves to turn brown and fall away.

COMMUNICATIONS RECEIVED.—C. J. Bees (see p. x.).—F. B. —A. S.—J. S. S.—Daisy—F. S.—Agriculist—J. E.—H. B.—G. R.—J. H. Trinidad—C. T. D.—W. S.—H. W. W.—L. B. & Co.—F. P.—L. G.—B. L.—C. J. C.—G. P. S.—W. A. C.—S. C.—H. C. P.—Zebra—M. Linden—F. W. C.—F. C. R.—S. W. T.—W. J. W.—E. M.—L. G.—W. B. H.—H. W. W.



THE

Gardeners' Chronicle

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HIPPEASTRUMS IN AMERICA.

THE articles and illustrations of various Hippeastrums (Amaryllis) which appeared in the last volume of the *Gardeners' Chronicle* have kindled a new enthusiasm for, and a new interest in these beautiful plants in every lover of refined and noble flowers. I have grown and hybridized Hippeastrums for nearly thirty years, and it gives me pleasure to see that the old species, such as Hippeastrum pardinum, H. reticulatum, and their hybrids again come to the front. Dr. Bonavia's "Queen of Spots," a hybrid of H. pardinum, and Mrs. Carl Jay's hybrid of H. reticulatum, var. striatifolium, bearing her name, which were finely illustrated in these pages, remind me of the work that was done in this country in years gone by, and of the men who did that work. During the early part of the nineties in the last century Mr. Henry Pfister, for many years the able and enthusiastic gardener at the Executive Mansion at Washington, D.C. (now again known as the White House), obtained great success not only in the hybridization of large and gorgeous show Hippeastrums,

but also in crossing the different species with choice hybrids. Various crosses between Messrs. Williams' fine Hippeastrum Dr. Masters (itself a hybrid of H. pardinum) and H. pardinum—the latter the pollen plant—resulted in a number of exquisitely spotted varieties, varying from a light to deep shade of red, all heavily spotted with deeper red. He selected the three finest, and named them Ruth, Esther, and Marion, after President Cleveland's daughters. The bulbs flowered when very small, and before they were quite two years old. These hybrids, however, were very delicate, and I lost mine during an exceptionally cold winter. They multiplied rapidly by offsets. The pollen of the variety Dr. Masters was also used on H. pardinum, but the flowers, though beautifully coloured, were defective in form, and were destroyed by their raiser. Another cross between H. psittacinum and one of Messrs. Veitch's show Hippeastrums resulted in a very beautifully deep-pink hybrid, without lines or bands of white or deeper red veinings. The interior of the tube was green. Mr. Pfister was, perhaps, the first who grew and hybridized Hippeastrums on a large scale in this country. Shortly after he had been appointed by President Hayes, in 1877, he ordered a collection of the finest varieties from Louis van Houtte, from van Eeden, and from Baelens, at that time the leading Hippeastrum specialists. In later years Messrs. Veitch, Williams, and Haage and Schmidt, supplied him with new kinds.

Mr. W. Otto Gronen, of the Rock Island Arsenal, Rock Island, Ill., worked in a somewhat similar manner, but with less material, although his collection was extensive. He used particularly Hippeastrum psittacinum major, not in itself a very showy kind, as a seed-bearer, and it proved exceedingly productive in beautifully-coloured hybrids. We all know that de Graaf's "Empress of India," one of the parents of our present show Hippeastrums, was raised from a cross between H. psittacinum and H. "Gravinæ." Mr. Gronen crossed it with Veitch's "Brilliant," and obtained a number of magnificently coloured hybrids. The three finest and most characteristic he named Koh-i-noor, Madame Modjeska, and Barbara Pomfret. These Hippeastrums were short-tubed, they had broad, well-rounded segments, and were of a great substance; in regard to colour-combination they were the most exquisite I have seen. They were perfect in form, but their flowers were small, being only 6 inches in diameter. Koh-i-noor had a glowing scarlet centre, a small, greenish-white star in the tube, and the segments were broadly tipped creamy-yellow. Madame Modjeska had a deep crimson ground-colour, a small, greenish eye, and the segments were broadly tipped and edged with almost pure white, heavily spotted with crimson. The third hybrid was similar, but the red was very light, with no green in the tube, and the segments were narrowly tipped with creamy-white. The constitution of all of them was rather weak, and I scarcely believe that they are still in cultivation. It would be interesting if these experiments could be repeated. H. psittacinum major can be easily obtained, and I think that Brilliant is also still in cultivation in England.

Mr. P. H. Oberwetter, of Austin, Texas, also used H. psittacinum major as a seed-bearer with grand results, but he used, in addition, van Eeden's Fidelio and Count Cavour, and particularly Johnsonii. The hybrids between the two first were very fine and of good form, but all showed too much green. The hybrids between H. psittacinum and Johnsonii, and vice versa, were all good at that time, but to-day they would scarcely be noticed. Mr. Oberwetter succeeded also in raising large numbers of hybrids of the smaller Hippeastrums of the Habranthus section, with very fine flowers, blooming at a time when other flowers are scarce—in October and November. In these experiments he used the following species:—H. advenum, H. roseum, H. brachyandrum, H. pratense, and several others. The experiments proved very successful, and he obtained large numbers of fine hybrids ranging from almost pure white, creamy-yellow, and a delicate pink to deep orange and bright scarlet. The leading breeders of Hippeastrums in this country at the present time are English and Scotch gardeners, and their productions rival the very best European kinds. Mr. Kenneth Finlayson (gardener to Dr. G. C. Weld, of Brooklyn, Mass.); Mr. E. O. Orpet, Lancaster, Mass.; and Mr. T. D. Hatfield (gardener to Mr. Walter Hunnewell, Wellesley, Mass.), have achieved great success. A very beautiful strain of exquisitely-coloured Hippeastrum originated with Mr. Byrnes, the able gardener to the U.S. Department of Agriculture, Washington.

In recent years Mr. Luther Burbank, of Santa Rosa, Cal., has produced a strain of cross-bred varieties which are said to out-rival all others in size and colour-combination. I have only lately obtained a collection of these, and, as they have not yet flowered, I am unable to express an opinion upon them.

During the last 15 years I have raised many thousands of cross-bred varieties from collections received from the late B. S. Williams, from James Veitch and Sons, De Graaf Bros., Mr. Kenneth Finlayson, and particularly from Mr. James Douglas. Mr. James Douglas's writing on this subject in the *Gardeners' Chronicle* and other English horticultural journals gave me my first start, and his letters still more encouraged me.

All my Hippeastrums are grown in the open air. They grow well in the sandy soil when liberally supplied with a commercial fertilizer, but they do best in moist situations along our lakes. Most of them are evergreen, and our nests the thermometer sometimes falls to 18° F.—never have hurt them in the least. During their flowering period, from late in March to the beginning of May, when thousands of spikes appear, the sight is exceedingly gorgeous.

I have only taken up the hybridization of the different species within recent years, and have as yet obtained but a very limited collection.

HIPPEASTRUM EQUESTRE is the most common Amaryllis of our gardens, being even found in large clumps around old, deserted homes in the woods. During April all the gardens are gorgeous with the huge masses of flowers. The clumps often consist of

from 30 to 50 bulbs, and very frequently 50 to 100 flower spikes appear at the same time from one cluster of bulbs. The colour is a dazzling light orange-red, with a yellowish-white star in the tube. I never have seen more than two flowers on a scape. A row of big clumps in my garden is 30 yards long, and, when in flower, it forms a grand mass of dazzling colour. This *Amaryllis* thrives in the driest and poorest sandy soil. It is very much used in the decoration of cemeteries and for planting along borders of the sub-tropical shrubbery. Though rarely bearing seed, even if hand-fertilised, it can be easily used in crossing other showy kinds. I have raised very beautiful hybrids of a glowing light orange-scarlet from such kinds as *Empress of India*, fertilised with the pollen of *H. equestre*. Our Florida plant appears to be the variety *H. equestre major*.

HIPPEASTRUM REGINÆ does not grow as luxuriantly and easily as the former, requiring much better and moister soil. I have used it in crossing *H. vittatum*, and *vice versa*, in the hope of obtaining a hybrid similar to *A. Johnsoni*, which is one of the most common *Amaryllis*es in the gardens along the Gulf Coast and South Atlantic as far north as Norfolk, Va. All the hybrids I obtained were greatly inferior to, and very distinct from, *Johnsoni*. This leads me to the belief that our present *Johnsoni* is probably not identical with the one raised about a hundred years ago by the watchmaker Johnson. However this may be, *Johnsoni* will always be one of our most beautiful garden plants of the Gulf region. The gardens of Mobile, New Orleans, Houston (Texas), and many others, are replete with big clumps of this *Amaryllis*, and, when in flower, the aromatic and delicious perfume exhaled by the masses of flowers forms a characteristic feature of this southland. In Florida it does not grow quite as well, requiring a richer and somewhat heavier soil. *H. Neyrling, Florida*.

(To be continued.)

FORESTRY.

HEREDITY AND FORESTRY.

ACCORDING to the *North British Agriculturist* of July 18th, Dr. Somerville discussed this subject in a paper read at a meeting held in connection with forestry at the late "Highland" show, and if Dr. Somerville has been correctly reported, his conclusions seem to come in conflict with the science and practice of forestry as hitherto understood.

HEREDITY AND FORESTRY.

"Dr. Somerville referred to experiments that had been conducted in Switzerland and Australia on behalf of the Departments of Forestry of the respective countries, and dealt with the results in connection with Spruce, Larch, and Sycamore, three trees well known in this country and widely distributed throughout Europe. He discussed the difference in size of seed and in the percentage germination of trees at high and low elevations, and said the reduction in stature of trees as a greater height above sea level was reached was a character that was inherited—it was transmitted to progeny. It would be most unsafe to apply Australian and Swiss results to the conditions prevailing in Scotland, but in the countries referred to there was no doubt that where plantations of Spruce and Larch were being formed at low or moderate altitudes care should be taken to secure seed from similar localities. For use at high altitudes seed from high altitudes must be obtained, and it seemed to be not unlikely that in Scotland they might cultivate woods at greater heights than they did if they made a point of securing high-grown coniferous seeds for the purpose."

If I understand this paragraph correctly, it means that, if you plant on low lands Scotch Fir or Larch, for example, that have been raised from seed produced at high elevations, they will

have inherited a stature according to the elevation, and will not produce tall timber trees, no matter how favourable the conditions may be to height-growth, and that trees from lowland seed will grow tall at high elevations having inherited that quality.

I have not heard of the experiments referred to by Dr. Somerville, but the theory is certainly new, and, if it is true, I should think that the fewer the trees that are planted that have inherited a high elevation habit the better. It is not trees of short stature timber-growers want, at high or low elevations, but tall trees of good, measureable dimensions.

It appears to me that if we only get more stunted trees through the combined influences of heredity and elevation, the less we ascend the better. We don't want short trees, and it is known nowadays that the higher up we plant, the shorter the trees become, and the less valuable the crop, no matter where the trees or seeds come from. I believe in weak and vigorous constitutions in trees, from the seed stage upwards, and that very much may be done in growing timber crops by selecting the strongest which keep the lead through life, but that you may convert giants into dwarfs and establish heredity according to the altitude at which you plant, one can hardly believe.

I have seen such planting at high and low elevations, and it has always been a puzzle to me why foresters have planted so high up on steep mountain sides when they could just as easily have utilised the lower reaches of the same waste land, where double or treble the weight of timber could have been got per acre in the same time.

"Height-growth" is what Continental foresters try to secure by every means, knowing that height-growth means also girth and bulk under proper conditions of culture. Stunted growth should never be encouraged in any form, because it means loss, but Dr. Somerville's heredity theory tends that way.

If the heredity principle holds good, one would think that it would do so in Larch from the high Alps. According to Schlich and others, this tree is generally found from 3,000 feet altitude up to 7,000 feet, the limit of tree growth, but the Larch raised from such seed and planted in Britain and elsewhere has produced trees of a height and bulk that surpasses anything known in the Alps.

It would seem also that the Japanese Larch does not support the heredity theory.

I lately saw at Novar the Japanese Larch leaving the common Larch quite behind; and at Holme Hall, York, 6-inch untransplanted seedlings, dibbled in in 1905, are, many of them, now approaching 7 feet, and are branched in proportion. They were about 6 feet 4 inches six weeks ago, and will grow until the end of October.

If only planters would realise the advantage of planting small seedlings instead of transplants, 4 and 5 years old and more, and keep rough grass and bracken down for two or three years, they might reduce the cost of planting 50 per cent. *J. Simpson.*

SEASIDE PLANTING.

THERE are many species suitable for growing in exposed positions, and near to the sea; but in almost all cases the plants should be thoroughly hardened and transplanted annually before being placed in their permanent quarters. The more exposed the position, the more necessary is it to carefully prepare the soil before planting. Dig, trench, or plough the soil as may be most convenient, but cultivate it so that the plants may have a favourable rooting-

medium. This tilling is best done early in the autumn, and if a month or two elapses before planting, so much the better. The land should be harrowed or hoed to destroy any weeds. Hares and rabbits are very destructive creatures, and a fence of wire-netting of a suitable height must be placed in position before planting. In making a fence of wire-netting, plough around the piece of land, and turn the turf or soil, as the case may be, outward; drive down the necessary stakes equidistant in the furrow, and lay the lower edge of the netting flat for 5 inches; thus, when it is stapled to the stakes and the "ream" is turned back into the furrow, we have not only the netting 4 inches below the surface, but also 5 inches at right angles from the upright netting. When a rabbit digs close to the foot of the visible netting, it encounters the out-turned wire: the animal rarely commences to dig at a greater distance than 5 or 6 inches from the netting.

In Cornwall during the past few years a considerable amount of planting has been done along the coast by nurserymen and by private persons. I have made notes of those subjects which have succeeded best, and these are given below. It must be remembered that not all those I enumerate are hardy in the Midlands and more northern localities:—

The Tamarisk (*Tamarix anglica*).—This is a well-known seaside shrub, and it will flourish even in spots where the waves reach it; the plant is not affected by cold, rough winds. The shrub should be pruned in the springtime to induce a bushy growth, for when the plants are dense they form a good wind-break. The long, straight shoots form suitable stakes for garden and greenhouse plants.

Veronica Andersonii and its variegated variety are excellent subjects for seaside planting, and quickly attain a good size.

Olearia Haastii and *O. macrodonta* may be planted in the most exposed positions. These shrubs are handsome, especially when in bloom.

The Sea Buckthorn (*Hippophaë rhamnoides*) withstands the rough winds and the salt spray well, but if it is required as an effective wind-break it requires to be planted thickly.

Amongst Conifers suitable for coast planting is *Pinus insignis radiata*. At first the foliage appears very yellow, but later it prospers beyond expectation. If it proves to be capable of withstanding the wind when 20 years planted as well as it does in a young state, it should afford one of the best of wind-breaks. *P. contorta*, *P. Laricio*, *P. Pinaster*, and *P. montana* are also grown in such positions.

Escallonia macrantha and *E. rubra* are both planted extensively. As single specimens, and when they are formed in rows, either quite close to the sea or as shelter belts inland, they form grand wind-breaks. They make dense masses of growth if they are pruned hard every year. These two species are, perhaps, the most extensively planted along this coast. I recently saw a hedge of *Escallonia* growing quite close to the water's edge.

The Pampas Grass (*Gynerium argenteum*) is also adaptable for exposed situations, and others are *Euonymus* in variety, *Griselinia littoralis*, *Cytisus scoparius*, *Buddleia globosa*, *Choisya ternata*, *Cupressus macrocarpa*, *Ligustrum vulgare*, *Laurus nobilis*, *Phillyrea intermedia*, *Osmanthus ilicifolius*, *Leycesteria formosa*, and *Atriplex*. This list includes the principal genera and species used, but it does not exhaust the number.

Dwarf, short-jointed plants that have been well hardened in the nursery should be chosen, and if they are about 1 foot in height they are better than larger ones. It is much better to plant a wide belt than a narrow one. *H. W. Trevisce.*

LYCHNIS.

At fig. 104 is reproduced a drawing by Mr. Worthington G. Smith of a *Lychnis* exhibited by Mr. Amos Perry at a meeting of the Royal Horticultural Society on September 3 last, when it obtained an Award of Merit. Mr. Perry informed us that several sorts of *Lychnis* then exhibited were original introductions from Thibet, and when first shown they were all described as *L. grandiflora*. Two or three sorts were of the

true *L. grandiflora*, Jacq. 1786, or *L. coronata*, Humb. 1784 (see *Botanical Magazine*, t. 223).

On submitting specimens of the hairy plants to Kew, we are informed by the Director that it is a form of "*L. Haageana*, Lem., which is said to be a hybrid between *L. fulgens* (*Botanical Magazine*, t. 2104) and *L. Sieboldii*, but is all but indistinguishable from the wild *L. cognata* max. of Manchuria. It is certainly not typical *fulgens*."

3 inches in diameter, being circular and almost regular in outline. The colour of the variety figured was rich rosy-crimson; but this is evidently a variable character.

HERBACEOUS SPIRÆAS.

THE herbaceous species of *Spiræa* have not been planted so freely in gardens as their merits deserve.



FIG. 104.—MR. PERRY'S FORM OF *LYCHNIS HAAGEANA*, WHICH RECEIVED AN AWARD OF MERIT ON SEPTEMBER 3 UNDER THE NAME OF *L. GRANDIFLORA*.

type now shown in the illustration, being very hairy, and differing from each other chiefly in the colour of the flowers. One form, however, was perfectly glabrous, being similar to the specimen figured in our issue for September 7, p. 189. The glabrous form appears to be the

Though the plant may be equivalent to *L. Haageana* in its botanical characters, it appears, nevertheless, to be distinct in the size and colour of the flowers from *L. Haageana* as generally cultivated in this country. The plants grow to a height of about 2 feet, and the flowers are nearly

The planting of water-gardens on natural principles has brought many robust species into cultivation, but there are many other equally good garden species suitable for planting in the herbaceous border.

The chief cultural requirement of all *Spiræas*

is a rich soil of deep tilth, and given this, all the species, including those used as waterside plants, can be planted amongst trees, shrubs, or flowering plants in any part of the garden. Their foliage is decorative, and in the springtime may be said to rival that of many Ferns in their delicate lobing and in the softer shades of green, whilst in the autumn season their leaf-colouring—principally shades of yellow and bronze—is very beautiful. Their inflorescences are elegant in habit, and vary from the flattened, "heads" of the dwarf *S. digitata* to the large, foamy "plumes" on flower-stems 2 yards long of the giant *S. camtschatica*.

Many plant borders would be enhanced by the addition of a few plants of *Spiræas*; they lend lightness and elegance to heavy colour masses, and they give a touch of informality amongst stiff-growing subjects. Recent introductions, mainly forms of *S. palmata*, *S. lobata*, and *S. camtschatica* have so far improved this genus from a garden point of view, that it is now difficult to imagine from what quarter their further improvement can be anticipated.

All the *Spiræas* can be readily increased by division of the root-stock in winter. A few species produce seeds freely, and by means of seedlings still greater variation in the plants is possible. Three or four small-habited species—*S. decumbens*, *S. digitata*, *S. pectinata*, and *S. filipendula* are pretty rock-plants that grace any position that may be assigned to them, and they are exceptionally valuable in that they flower when the bulk of true Alpine flowers are over. In a poor, hungry soil *Spiræas* will not grow well: improve the staple, and the plants will thrive as long as the improved condition may last. An annual mulching of the site will keep the plants thriving indefinitely, but there must be no relaxation of cultural aid. The only species capable of growing anywhere is *S. filipendula*. This species forms huge mats of its tubercled roots, square poles in extent, on some limestone hills, and it manages to live where the majority of plants literally starve. Such plants are practically flowerless, however, for only well-developed specimens flower freely.

S. ARUNCUS.—This is the common Goat's Beard, and is a plant that lends itself for effective grouping in the wild-garden, by the water-side, in clearings, among shrubs, &c. It is one of the few plants that can be planted anywhere in the garden without fear of failure. I have seen splendid specimens in various parts of Britain worthy of all praise, but the best plants I know are growing in a garden at the foot of a chalk cliff on the banks of the River Thames by Henley. There were 24 strong clumps in the group, and one felt astonished at the stately grandeur the plants presented.

S. A. VAR. KNEIFFII.—This variety has depauperate foliage that may be admired for its elegance, but as a flowering-plant it possesses no real beauty, the panicles being small. One cannot compare this plant with the type without noting its deficiency in stature and also its lesser garden value. The variety is worth cultivating, however, for its leafage alone.

S. A. VAR. PLUMOSA is of a better type than the last-named, and it serves a useful purpose in gardens in that its stature is about one-half that of the type, and for that reason it may be planted in quite small gardens. The foliage is of a pale nut-green and the leaf-lobes are minutely serrulate—so minutely as to appear fringed. The stems and leaf-stalks are ruddy tinted; the inflorescence consists of an elegant white panicle 2 feet long.

S. ASTILBOIDES.—This plant and its varieties (now classed by botanists in the genus *Astilbe*) are the well-known *Spiræas* of the market florist, and are so well known that a description is quite unnecessary. As a garden plant, this species is inferior to many other *Astilbes* for

waterside planting for it is often destroyed by late frosts, but as a plant for forcing it is of much value.

S. CÆSPITOSA.—This is a distinct little plant, that one would not consider to be a *Spiræa* at first sight. The leaves and creeping stems form a dense, silvery mat, similar to a close-habited *Achillea*, and the growths are studded with small spikes of white flowers in their season of flowering. It is of easy cultivation, and may be grouped in the rock-garden or among the stones at the edge of a border. The plant is a native of the Rocky Mountains, and is very rare in cultivation.

S. CAMTSCHATICA (*S. gigantea*) is a splendid garden plant, and taller than *S. aruncus* when well cultivated. The leaves are Sycamore-shaped, and of a dark green colour. The stems exceed 6 feet in height, are quite unbranched, and develop huge, foamy masses of white flowers, often 18 inches across. A colony of 30 to 40 such stems, each crowned with its head of flowers, cannot fail to impress one with the grandeur of the species. It comes from the



FIG. 105.—SEMELE (RUSCUS) ANDROGYNA
FLOWERING IN THE OPEN IN DEVONSHIRE

north-eastern extremity of Siberia, and has been in cultivation for a long period. The variety *elegans* has pale-rose coloured flowers, and is of a less robust habit. There is another variety named *rosea*, which is similar to the type, with the exception of its flowers which resemble those of *S. venusta* in their colouring—a rich shade of rose.

Recent seedlings of this plant show traces of hybridity with *S. venusta*, and there is now an unbroken chain of connecting variations between the two species. One character remains, however, to separate the species—all the derivatives of *S. camtschatica* are pubescent throughout, including the stems and the leaves. In those of *S. venusta* (*lobata*), they are distinctly glabrous, and some varieties have highly-polished stems and petioles. *S. camtschatica* cannot well be overfed, and liberal mulches in dry seasons help it to bear its flowers without strain. It is a splendid plant when grouped in sunny clearings of woodland in quantity. *G. B. Mallett*.

(To be continued.)

SEMELE ANDROGYNA.

This handsome climbing plant is a native of Madeira and the Canary Islands, and in the first-named island it adds much to the beauty of the landscape and is often seen wreathing the pillars at the entrance to Quintas. The species was introduced into this country nearly 200 years ago and is perhaps better known in gardens as *Ruscus androgynus*. It is very rarely met with in the open in this country, but in Devon and Cornwall it is found in gardens, though, owing to the past severe winter, two small plants in Cornwall appeared almost dead in April of the present year. The cladode-systems (see fig. 105) have the appearance of pinnate leaves: they are from a foot to 2 feet in length and are furnished with from 12 to 20 pinnate sections of brightly polished green colour. As the whole is of a drooping habit the shining green colour is well displayed, and a wall well covered with the plant is an attractive feature. The cladodes are very leathery in texture and it is not uncommon for them to remain in a perfectly fresh condition for six or seven years. When the plant is well established, strong, Asparagus-like shoots are thrown up that, in vigorous specimens, often attain a length of 40 feet in one season. In young plants these shoots often appear as early as November, but in others that have been established for some years these do not show until the spring. *Semele androgyna* forms a splendid subject for a cool structure. In the Temperate House at Kew there is a fine specimen which has reached the glass roof, at a height of over 30 feet. In the summer the small, greenish-white flowers, each about one-eighth of an inch across, are borne, as will be seen from the accompanying illustration, in clusters at the edges of the pinnules. Every cladode upon the plant from which the one illustrated was cut was covered with these tiny blossoms, and the effect produced was pretty, though it is owing to its attractiveness as a foliage rather than a flowering-plant that this *Semele* is chiefly valuable. The flowers are followed by red berries, and these are sometimes seen on plants grown in the open in Cornwall. *S. W. Fitchfort*.

TREES AND SHRUBS.

MAGNOLIA HYPOLEUCA.

ACCORDING to a communication of Mr. J. Meehan, in *The Florists' Exchange*, this plant may be increased not only from seed, but also by layering and grafting. It is necessary to sow the seeds as soon as they are mature, as they will not germinate when once they have been dried. Of the known species of *Magnolia*, *M. tripetala* has the greater similarity to *M. hypoleuca*, more particularly in habit, as well as in its behaviour under cultivation, but *M. hypoleuca* is the finer of the two. The leaves are firmer and stronger, and differ in having reddish veins. Another advantage that *M. hypoleuca* has, is that the odour given off from the blooms is less penetrating than that of *M. tripetala*, which is both pungent and unpleasant. The flowers of both species appear after the foliage has fully developed, towards the middle of June. Seed sowing is to be preferred to either of the other methods of increase named above. *F. M.*

THE ALPINE GARDEN.

ANTHEMIS BIEBERSTEINIANA.

This species is one of the prettiest of the Alpine Chamomiles. It is of very neat and graceful habit and develops handsome, silvery foliage, which gives a fine contrast to the golden flowers, each of which is about 1 inch across. The plant is quite hardy and easy of culture. A mixture of good loam and sand forms a suitable rooting medium; and it should be afforded a sunny position in a well-drained border or rock garden. A copious supply of water must be given the roots at least once a week in a hot, dry season. *W. Glover, Somerset*.

FORDE ABBEY, CHARD.

THIS old abbey was, until 1842, included in the county of Devon, being one of the five Cistercian houses founded in Devonshire, but it is now regarded as belonging to the county of Dorset.

The abbey is one of the most interesting and probably the most perfect in preservation in the country, and although it retains so much that is ancient, the interior is fitted with every modern convenience.

The West of England abounds with beautiful scenery, and Forde Abbey is situated in one of the most delightful parts. The River Axe, said to be the most winding stream in the country, flows through its grounds, meandering along

feet in height, are now used as a winter garden, and they are decorated with groups of flowering and foliage plants, including some fine Palms.

Many years ago the estate was purchased by Mrs. Evans, who, with the co-operation of her son, W. H. Evans, Esq., did much to restore and beautify the old structure. On the decease of this lady, in 1906, Forde Abbey came into the possession of the present owner, Mrs. Freeman Roper.

There are two entrances to the estate—the one adjoining the main road from the station on the south, the other on the east, leading to a broad drive, a quarter of a mile long, that passes the front of the abbey and extends to an elevated spot known as Blackmuth's Hill. By the side

There is a fine specimen of the Rose Reve d'Or growing to a great height and entwined with green Ivy, forming a beautiful object when in flower. The roots of this Rose ramify beneath heavy paving-stones, and one wonders how it finds nourishment to produce its long shoots. A gateway at one end of a tower is clad with Ampelopsis and Clematis montana; this latter when in bloom mingles its flowers with the new boughs of the Creeper. On the central tower the common Virginian Creeper reaches almost to the top, and other walls are covered with old garden Roses, late-flowering Clematises, Jasminum revoluta, &c.

A small sunken flower garden is seen from the carriage drive. At the time of my visit the beds were occupied with tender bedding plants,



FIG. 106.—FORDE ABBEY, CHARD, THE RESIDENCE OF FREEMAN ROPER, ESQ.

[Photograph by F. Mason Good.]

a fertile valley of rich pasture land or backed by hills that are covered with cornfields, orchards, and woodland. The monks who first settled here made a wise choice of locality, and in those remote days the spot was probably not less beautiful than now. The abbeys in olden times often changed ownership, and Forde was no exception. But it is worthy of note that the fields, &c., are still known by the same names as are recited in the deed when they were conveyed to one Richard Pollard.

The building includes some noble towers, an ancient chapel, a spacious saloon containing some of the most beautiful old tapestry in the country, and a magnificent hall of great height and beauty, in which are examples of the work of the famous artist Inigo Jones. The stately cloisters, measuring 82 feet in length and 17

of this latter walk are aged Lime trees, which form a canopy up to the chapel. Close to this spot a Yew hedge, many feet wide, encloses a part of the garden known as "The Park Garden."

The abbey itself faces south, the chapel being at the extreme end according to the monkish custom. A tree of Jargonelle Pear is growing against the walls of the chapel, where it was planted about 150 years ago. It is still in good health, and furnishes good crops of fruits that ripen early. Close by the chapel door is a specimen of the Loquat, planted more than 40 years ago; the tree bears fruits, but they have never ripened. One of the buttresses of the cloister has a large area covered with Lonicera fragrantissima, which blooms all through the winter in mild seasons.

including a choice strain of tuberous-rooting Begonias. At the foot of the abbey wall is a flower border 3 to 4 feet wide, and this was gay with Ivy-leaved Pelargoniums, Roses, tall-growing Salvias, and Zonal Pelargoniums, all planted in groups of one colour.

The abbey is 100 yards long, and at the western portion of a broad walk is a border in front of a south wall; on this I noticed many aged Apple trees, among them the true old Golden Pippin. Roses, Ceanothus, full of bloom, and many other beautiful plants adorned the wall.

Herbaceous and many annual flowering plants in this border were attractive. Especially fine were large masses of Calceolaria amplexicaulis and single blue China Asters, with white and red Phlox associated together.

On the other side of this walk is a sunken tennis court. An ornamental pond is situated near to rising ground, known as The Mount. The gardens here are much sheltered, and are planted with an assortment of tender-flowering and ornamental-foliaged shrubs. On the grass is a large plant of *Juniperus sabina prostrata*, a variety seldom met with. Near this spot a tree of Douglas Fir attains to a height of about 150 feet. Trees of *Araucaria imbricata* equal those at Bicton, and there are fine specimens of Cypresses and deciduous trees, with large bushes of common *Rhododendrons* growing by the side of the carriage drive. A wild garden has been formed in an old disused gravel pit.

The Park Garden has a number of interesting features, and it is planted with many choice shrubs, both on the grass and in beds. The shrubs have been spaced so as to leave room for the planting of hardy perennials, tender-flowering plants, and annuals.

A small kitchen garden is situated on the north side of the abbey. The walls surrounding the kitchen garden are very old; they are well covered with fruit trees. The glasshouses are old, and are shortly to be replaced by new buildings. Two of the vineries are heated with flues, but they contained good crops of Grapes. An orchard contains a selection of the best kinds of fruit trees, many of which are young specimens. *Western.*

PLANT NOTES.

COMBRETUM PURPUREUM.

WHEN in good condition this stove climbing plant will flower throughout the summer months, and even into the first part of autumn. It is well adapted for clothing a rafter in a medium-sized structure, being less vigorous than many climbers. The leaves are ovate-lanceolate in shape, and dark green in colour, while the flowers are totally unlike those of any other occupant of our stoves. Though individually small, the blossoms are borne in dense spikes quite 6 inches long, the latter in their turn forming a somewhat fan-shaped panicle. The colour is a kind of crimson scarlet. The flower-spike is not cylindrical in shape, as the blossoms stand erect along its upper surface. The plant is not a vigorous-rooting subject, therefore care should be taken not to overpot it, and the pots which are to be used should first be made clean and also be effectually drained. A compost consisting of equal parts good fibrous loam and peat, with a liberal sprinkling of silver sand and a few nodules of charcoal, will suit it well.

The propagation of this plant by means of cuttings was at one time considered a difficult matter, having, indeed, been referred to as an impossibility; but this was years ago refuted by Mr. Lynch, of Cambridge, who rooted it without any particular difficulty. In *Index Kewensis* this species is referred to as *C. coccineum*. *W.*

The Week's Work.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq., Norwood, Alloa, Clackmannanshire.

Pines.—The succession plants which are expected to afford ripe fruits early next year should now be well established and have their pots full of roots. As the plants will require to rest during the next three months, the atmospheric temperature of the pit should be kept at about 60° at night and 75° by day; the bottom heat should not be permitted to exceed 65° or 70°. The roots will require very little water throughout the winter, but care must be exercised, because the plants should not flag at any time from drought. Admit air to the pit daily

during mild weather. Pines which are now showing fruits require the atmosphere to be moist, and its temperature at night should range from 70° to 80°. During very fine weather admit a little air to the pit each day, but close up again early in the afternoon, keeping up a heat equal to 90°. When the weather is bright a thorough damping down of the floors is necessary. A bottom heat of 85° is required at this stage for the fruits to mature. Let the watering be done with care, neither applying too much nor too little.

Pine suckers which were potted into 6-inch pots and are now growing freely should have an atmospheric temperature at night of 65° to 70°, and a bottom heat of 75°. Maintain the atmosphere in a humid condition, and lightly spray the plants with water each day. Admit air daily, and endeavour to grow the plants as sturdily as possible. All the best suckers should be detached from the autumn-fruiting plants and potted-up, in order that they may get established before winter.

Fig trees which have been yielding ripe fruits for some time past, and have still fruits in the swelling and ripening stages, should be afforded a supply of liquid manure once each week. Keep the house well ventilated and the atmosphere dry while the fruits are ripening. Fig trees from which the fruit has all been gathered need an abundant supply of fresh air, and they should be well syringed and the house kept cool, but the borders must now be kept drier. Cut out all shoots that will not be required for fruiting next season. The early Fig trees in pots plunged out-of-doors will require protection from heavy winds. If heavy rains become frequent, the plants must be placed in some structure, such as an unheated orchard-house.

Melons now colouring should be well exposed to the air and light. Keep the atmospheric temperature of the house at about 70° at night, and 80° to 85° by day, according to the state of the weather. Be careful not to over-water the plants or the fruits may be caused to split and so become useless. Admit air daily, and leave the top ventilator open very little throughout the night. Later plants, on which the fruits are now swelling, need a warm, moist atmosphere. Maintain a liberal bottom heat, and afford water very carefully, but do not allow the plants to flag.

THE HARDY FRUIT GARDEN.

By J. MAYNIE, Gardener to LORD CLINTON, Bicton, East Devon.

Grease bands.—The annual spraying of fruit trees now practised by most growers may be said to render less necessary the wrapping of the tree stems with grease bands, but anything that will lessen the attacks of caterpillars in early spring should not be neglected. The females of the winter moth come out of the ground during the next two months and climb up the stems of the trees, locating themselves either between the rugged bark or wherever they get a footing secure enough to lay their eggs. By placing grease-proof bands of paper some 6 inches wide around the base of each tree and stake, making the same secure with ordinary paste made from flour and water, and then smearing the bands over with grease, the moths may be prevented from ascending the trees. I have used Horne's preparation with good effect. Prevention is always better than cure. Examine the bands every few weeks, and make a fresh application of grease as often as is necessary. These remarks apply principally to trees in the open garden or orchard; those against walls, fences, or trellises cannot be preserved in this manner, as the insects have more ways of climbing than by the stem of the tree. In these cases repeated sprayings are more effectual.

Mulberries are much later in ripening this season than usual, and the birds here are taking a considerable share of the fruit, partly, no doubt, on account of the dry state of the ground affecting their food supply. Gather the ripe fruits every few days, and if the trees are growing over turf, the branches may be shaken and the fallen fruits gathered up, doing this at a time when the fruits are perfectly dry. These are useful for the making of tarts, as well as jelly.

Pears.—Many varieties will be ready for storing, but locality must determine, as no precise date would meet each individual case. Beurré Hardy, Beurré d'Amanlis, Beurré Bosc, Beurré Superfin, Doyenne Boussoch, Fondante d'Autonne, Hessel, Gratioli de Jersey, Pitmaston Duchess, Seckle, and Louise Bonne de Jersey, growing against warm walls especially, will now be fit to gather in this part of the country. Many of the later varieties should be allowed to hang on the trees until nearly the end of the present month, shrivelling taking place if gathered too soon, these later sorts requiring a long time to mature. The varieties mentioned above must be examined every few days, as they ripen quickly when stored, and are not capable of keeping in good condition for a long time.

Late Plums.—Blue Imperatrice, Grand Duke, Belle de Septembre, Monarch, Late Orange, and Late Rivers are varieties worthy of note, and will continue the supply until quite late in the month. The cold nights experienced lately will have destroyed many of the wasps and flies which prove such a pest to these fruits, and the excellent weather of the past few weeks has increased the colour as well as flavour of those fruits still hanging on the trees.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

Autumn flowers.—The recent fine weather resulted in such a profuse display of all kinds of autumn flowers, that parks in which these are made a feature have been additionally attractive this year. The value of this display has been greatly enhanced in consequence of the general poverty of the earlier summer-flowering plants. The vagaries of the past season illustrate how necessary it is for those in charge of public gardens always to make the most ample provision for spring, summer, and autumn flowers, so that whatever the weather may be during one of the seasons, there is always the possibility of the others producing their quota of floral wealth. Those who have worked on such lines will remember the present year as an ideal one for spring and autumn-flowering plants.

Generally speaking, it seems as if autumn-flowering plants are not so much used in parks as they might be, a circumstance all the more regrettable when it is remembered how easily this could be done. The borders of many shrubberies which are often dull and uninteresting may be made bright and attractive by utilising them for autumn-flowering plants. The late Mr. Jordan, while at Regent's Park, made it noted for the beautiful flower-borders formed in front of the ordinary shrubberies, showing in a striking manner what opportunities there were for utilising and improving them in this way.

The bands usually cease playing music in parks by the beginning of September, whilst visitors are still very numerous, and therefore it becomes the more necessary to provide some other attraction, such as a display of autumn flowers. To obtain the best effects with such a display, there is undoubtedly no better method than arranging the various varieties of plants used in bold groups of a kind, set out at irregular intervals throughout the length of the border.

Arrangement of colours.—While no clashing of colours should be allowed in such an arrangement, it does seem that in some quarters too much stress is now being laid upon the question of colour-design. In nature there is no methodical blending or contrasting of colours, and yet in sub-Alpine meadows, where a great abundance of different kinds of flowers are growing indiscriminately together, what more pleasing, and, to the ordinary observer, harmonious effects can be desired. Provided there is a sufficiency of moisture in the soil, the present is a good opportunity to divide up and plant the herbaceous section of autumn-flowering plants. Plenty of room should, however, be left for the many annual and half-hardy plants which help to make our gardens gay until the advent of frost.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Surrey.

Lycastes.—Plants of *Lycaste Skinneri* and its varieties are now making many young roots from the growths made during the present year, and as the growths are commencing to form their new pseudo-bulbs, the plants henceforth will require to be liberally supplied with water at the root until pseudo-bulbs are fully developed.

Plciones, having completed their pseudo-bulbs, should be placed in a position perfectly exposed to the sunlight, and as the leaves become yellow and fall away, only sufficient water will be needed to keep the soil in a moderately moist condition. The flower buds will presently spring up from the base of the young, green shoots, and if much water were afforded at such a time, it would cause the delicate blooms to lose their colour and fall. Just before the flowers are expected to expand, the plants should be arranged in a dry position, that the blooms may be capable of remaining fresh for a considerable time.

Miltonias.—If the plants of *Miltonia vexillaria* have been cultivated in the cool house during the past few months, they should now be removed to a light, well-ventilated position in the intermediate or Cattleya house, and as the new growths advance and roots become plentiful, gradually increase the quantity of water at the root. Do not keep their immediate surroundings very moist, especially in dull or wet weather, as the tender leaves would be liable to become spotted and decay at their points. The Brazilian *Miltonias* that have completed their season's growth and are developing flower-spikes, will require to be watered very carefully, as too much moisture would cause disease to attack the leaves and pseudo-bulbs. The amount of water used for damping between the pots should also be reduced as the season advances.

Laelias.—The dwarf-growing *Laelia præstans*, and *L. pumila* and its varieties, that are now showing flower buds, will require a few degrees more warmth than heretofore to assist their proper development. Suspend the plants near to the roof glass of the intermediate house in full sunlight. Afford plenty of water to these plants all through the flowering season, and till the new pseudo-bulbs are made up, but afterwards reduce the amount gradually.

Czlogyne cristata and its varieties are now growing actively and should be kept well up to the light in the intermediate house, affording them copious waterings until the pseudo-bulbs are fully made up.

Epidendrum vitellinum grows exceedingly well when suspended from the roof in a moderately shady position in the intermediate house. As the flowers commence to fade, keep the plants rather drier than before, but do not allow the pseudo-bulbs to shrivel for want of water at the root.

Cymbidium Lowianum.—Plants that have made their growth should be kept rather on the dry side for several weeks, otherwise they may start into growth again, and therefore fail to produce flower-spikes. Immediately the flower-spikes can be seen, afford the plants every encouragement to develop them perfectly. Let them be cultivated on the lightest side of the intermediate house, with the foliage almost touching the roof glass.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Violets under glass.—These plants having been cultivated on a prepared border, should now be lifted for replanting in their winter quarters. If it is intended to put them in a frame, select one that faces to the south, if this is possible. One that has been used for the cultivation of Melons during the summer would be a capital place for Violets in winter, and the moderate heat afforded by the old hot-bed would prove of great service to the Violet roots. If such a place is available, it will be necessary to mix a good proportion of leaf-soil, and some sand, with the soil already in the Melon bed. I do not recommend the practise of planting Violets so high that the leaves will almost touch the roof-glass. It is

better to allow for a distance of 6 to 12 inches between the leaves and the glass, because the foliage will then be less susceptible to suffer injury during a long period of bad weather. If the plants have been well cultivated during the summer, they should now possess strong, healthy crowns, most of the runners which formed having been taken off early to promote the strength of the crown. If the weather is still dry, let the plants be afforded a thorough watering on the day previous to being lifted. Be careful to avoid breaking the ball of soil around the roots, as Violet plants that have been carelessly lifted and most of the soil shaken off, seldom give satisfactory results in winter. As space under glass is most valuable in winter, the plants may be put moderately close together in the frame, or so that the plants will just meet with their outer leaves. Make the soil firm around the roots of each plant, and when the planting is completed apply a thorough watering. During bright, dry weather the lights should be put on, and the plants shaded for a few hours during the middle of the day, removing them again in the afternoon, and damping the plants lightly overhead at the same time. As soon as the plants have recovered from the check caused by transplantation, keep the lights off them altogether in the day time for a period unless rains are prevalent. In any case, the frame should be ventilated freely by night and day, closing it only at such times as there appears to be danger from frost. Keep all decaying leaves picked off, and stir the surface soil if it is inclined to become caked. I would strongly advise gardeners to put a number of the plants into pots, Violets being capable of succeeding exceedingly well under pot-culture. Such plants can be moved about as desired, and they are very useful in the show houses, and also in the dwelling-house, where they will last in good condition for a few days at least, and, being a favourite flower with almost everyone, they never appear to be "out of place." The pot plants may be given the same treatment as recommended above, but the cool fruit-houses may be utilised for these plants in winter. If they are placed on a shelf in such a house, they will be exposed to the light, and there will be a good circulation of air around them which is essential to the successful cultivation of Violets in winter. The atmospheric temperature of the fruit-houses at night under ordinary conditions is very suitable for Violets.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq., Cobham Park, Surrey.

Cauliflowers.—These will now be large enough for planting out in cold frames for the winter, or they may be potted-up to be placed on the shelves of a late vinery or Peach-house. It is essential that the plants should be given this attention as soon as they are in a fit condition, in order that they may not become weakly and drawn through overcrowding, and consequently the less able to withstand the ill effects of dull and cold weather in winter. If the plants show signs of flagging, keep the frames rather close for a few days, or until the roots become active, after which air should be admitted freely whenever the weather is favourable, this applying to all the winter season. If a second sowing of Cauliflowers was made, it will, of course, be necessary to leave sufficient space in a frame to make a further planting of the later plants. If the character of the weather should have the effect of causing the first batch to get too large, the later plants will prove to be most useful and be less likely to bolt or turn-in prematurely after they are planted in the open garden in the spring.

Tomatos.—Many fruits will now be on the point of ripening, the plants generally being in full bearing owing to the backward season. To obtain the best results under the circumstances the plants had better be cut off at their base with their fruits attached, and suspended their full length in the vineries or other convenient places, as by this means they will retain their plumpness much better than if cut off individually or in clusters, and the supply will be kept up for some considerable time.

Herbs.—Such herbs as Tarragon and Chervil should now be cut hard back, that the roots

may be lifted and put into boxes ready for placing into moderate heat towards the end of the present month. The plants may then be expected to afford supplies from Christmas onwards, when additional plants should be in readiness to form a succession. Mint raised from cuttings inserted in boxes, as was advised in *Calendar* printed in the issue for July 13, should be cut back ready for starting at the same time as the Tarragon. If cuttings were not taken, it will now be necessary to lift some roots and treat them as the other herbs.

Onions.—Owing to the fine weather which has been so general throughout the country, Onions will have been harvested in excellent condition, and should now be placed under cover while the bulbs are thoroughly dry.

Carrots and Turnips.—Young plants of Carrots and Turnips raised from the late sowings are looking wonderfully clean and healthy. They may be expected to continue growing for another three weeks or so. Loosen the surface soil frequently with the hoe, and keep the ground free from weeds in order to give these young crops the best chance possible. The same remarks apply to the August-sown Onions, which this year appear to be thriving unusually well.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Planting trees and shrubs.—Except in very heavy, cold soils, autumn is to be preferred for planting most kinds of hardy trees and shrubs, and when the ground has been well moistened by rains the sooner this work is commenced the better, in order that the freshly-planted subjects will have sufficient time in which to make new roots before the winter sets in. If the staple is poor, it should be enriched with manure, leaf-soil, road-soil, ditch-clearings, etc., if these materials can be afforded. Heavy soils may be made more suitable by the addition of charred garden refuse. The essential details to be observed in transplanting are as follow. Make the holes sufficiently wide that the roots may be laid out at full length, remove, with a clean upward cut, the ends of all mutilated roots; carefully fill in between the roots with soil that is in good condition as regards the right degree of moisture; make the soil firm about the roots of each tree; stake and tie each tree securely; afford a copious watering if water is needed; guard the stems against the attacks of rabbits and vermin, and affix an indelible label to all but the commoner kinds. Trees which have to travel long distances from the nurseries sometimes arrive with their roots in a dry condition, and these should at once be immersed in water, for no matter how much the shrub is watered after it is planted, it will rarely thrive if planted with a dry ball of soil and roots. Hollies are exceptions, and may be transplanted during May with better results; Rhododendrons should be planted in the spring; Camellias as soon as the year's growth has been completed. All these and any shrubs of doubtful hardiness, which may be tried during late spring or early summer, may be regarded as exceptions when treating of the autumn planting of trees and shrubs.

Gladiolus.—When the foliage has thoroughly ripened, the corms should be carefully lifted and laid, with the stems attached, in a cool house or pit to dry. Before storing them for the winter it is as well to rub off the offsets, and to grade the corms in different sizes.

Herbaceous plants.—Frequently clear away all dead flower-stems. Remove any stakes which are no longer needed, and all annual plants which have finished flowering. Mark, by affixing labels or small stakes, the positions of all deciduous bulbous plants, so that when the border receives its annual dressing these dormant bulbs and corms may escape injury. Do not delay doing this important work until the location of such plants cannot be determined.

The propagation of bedding plants.—Propagation should now be completed, as very late-rooted plants are not often satisfactory. Any varieties of Pelargonium, &c., of which the stock is still short, may be supplemented by lifting and potting-up the more compact plants at present in the flower-beds.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If it is used, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, OCTOBER 5—
Soc. Franc. d'Hort. de Londres meet.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—51.7°.

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, October 2 (6 P.M.): Max. 64°; Min. 53°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, October 3 (10 A.M.): Bar. 29.7; Temp., 61°; Weather—Bright sunshine.

PROVINCES.—Wednesday, October 2 (6 P.M.): Max. 57°; Cornwall; Min. 53°, Scotland N.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—
Sale of Dutch Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY TO FRIDAY—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

MONDAY—
The Freehold Nursery with 19 Greenhouses, &c., Bungalow Residence, and the Stock of Ferns, &c., at Avenue Road Nurseries, Southgate, by Protheroe & Morris, at 12.

TUESDAY—
Aspidistras, Palms, Privet, &c., at Lilford Road Nurseries, Camberwell, S.E., by Protheroe & Morris, at 12.

WEDNESDAY—
Young Nursery Stock at the Old Nursery, Spring Grove, Isleworth, by Protheroe & Morris, at 12.
Liliums, Bulbs, &c.; Palms, Azaleas, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 5.

WEDNESDAY, THURSDAY AND FRIDAY—
Well-grown Nursery Stock at Cart House Lane Nurseries, Woking, by Protheroe & Morris, at 12.

FRIDAY—
The "Cambridge Lodge" collection of Orchids, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

It often happens after a spell of dry weather, such as that experienced during the September which has just passed, that many of our trees, especially those growing on sandy soils, lose their leaves prematurely.

Now the mechanism of ordinary leaf-fall, as it occurs in autumn, is one of considerable interest, affording as it does one of the best examples of the adaptation of a plant to its environment. But it is so common that save when it happens at an unusual time of year, it hardly excites remark.

Everyone knows that a branch of a tree cut off in summer does not shed its leaves. They merely dry up and shrivel, but they do not fall off. If the same operation be performed later on, or in early autumn, the result is very different. The leaves begin to be detached from the branch sometimes even before they begin to wither. Other plants, again, like the common *Grevillea robusta*, when grown under unfavourable conditions, display the phenomenon of defoliation in a most striking and irritating manner.

The method by which the detachment is provided for is very simple, albeit a very effective one. The tissues of the leaf-stalk consist of a midrib enclosed in a soft mass of cells known as the cortex, the whole being contained in an external skin or epidermis. Whilst the leaf is young, the cortex is directly continuous with that of the stem, but sooner

or later a plate of cork appears across the cortex at the base of the leaf. In this way the living tissues of the latter become cut off from direct communication with those of the stem. The midrib, however, still remains as a continuous strand of tissue permitting of an exchange of water and food between the stem and leaf, and this connection is maintained until the very end. Although this plate of cork is normally produced in deciduous trees as the summer advances towards autumn, its appearance is hastened if for any reason the supply of water to the roots should fall short.

The significance of this layer of cork lies in the fact that the cells of which it is composed are dead when they reach maturity, and so the living cells of leaf and stem become separated by a sheet of what is practically (and actually) a scar tissue. The structure of the scar is such that not only does it provide for the cutting off of the leaf, but the wound is, so to say, already healed before it is really formed, and thus no fungal or other pests find an entrance when detachment finally takes place. Everyone must have noticed how quickly the leaves fall off after the first frosty nights of autumn, even when there is no wind, as soon as the morning begins to get warm. What has happened is that water has frozen in the separation layer, and this causes a rupture of the tissues just as water pipes burst when they are frozen. For in the act of solidifying, expansion takes place with great force, and not only is the cork layer ruptured, but the cells of the midrib are also torn asunder. Thus as soon as the sun's rays are strong enough to melt the plate of ice which is now all that holds them on to the stem, the leaves drop off in continuous showers.

A special point of interest connected with this cork plate, or absciss-layer as it is often termed, is this: it represents a definite kind of response which a plant makes towards conditions that hinder the adequate supply of water to the leaves. Hence a drought in summer, if sufficiently severe, hastens and intensifies the formation of the absciss-layer, and may thus lead to the premature defoliation which results from such conditions. In any event, the plate is almost always forming during the drier weather that usually prevails in August or September. In autumn the shortage of water is often due to conditions other than those occurring in summer. For the roots, as the soil becomes chilled by the cold rains, are less active in absorbing water. A similar state of things may also result from any other circumstances that prejudicially affect root-absorption, such as insufficient aeration of the soil, whether due to excessive water-logging, or to other conditions such as often occur in urban districts.

We may speak of plants which for any reason are unable to utilise existing water supplies, as suffering from physiological drought, because, like the ancient mariner, although there may be "water, water everywhere," it is not really available; it cannot be absorbed by the organism, which is thus no better off than if it were exposed to conditions of physical drought.

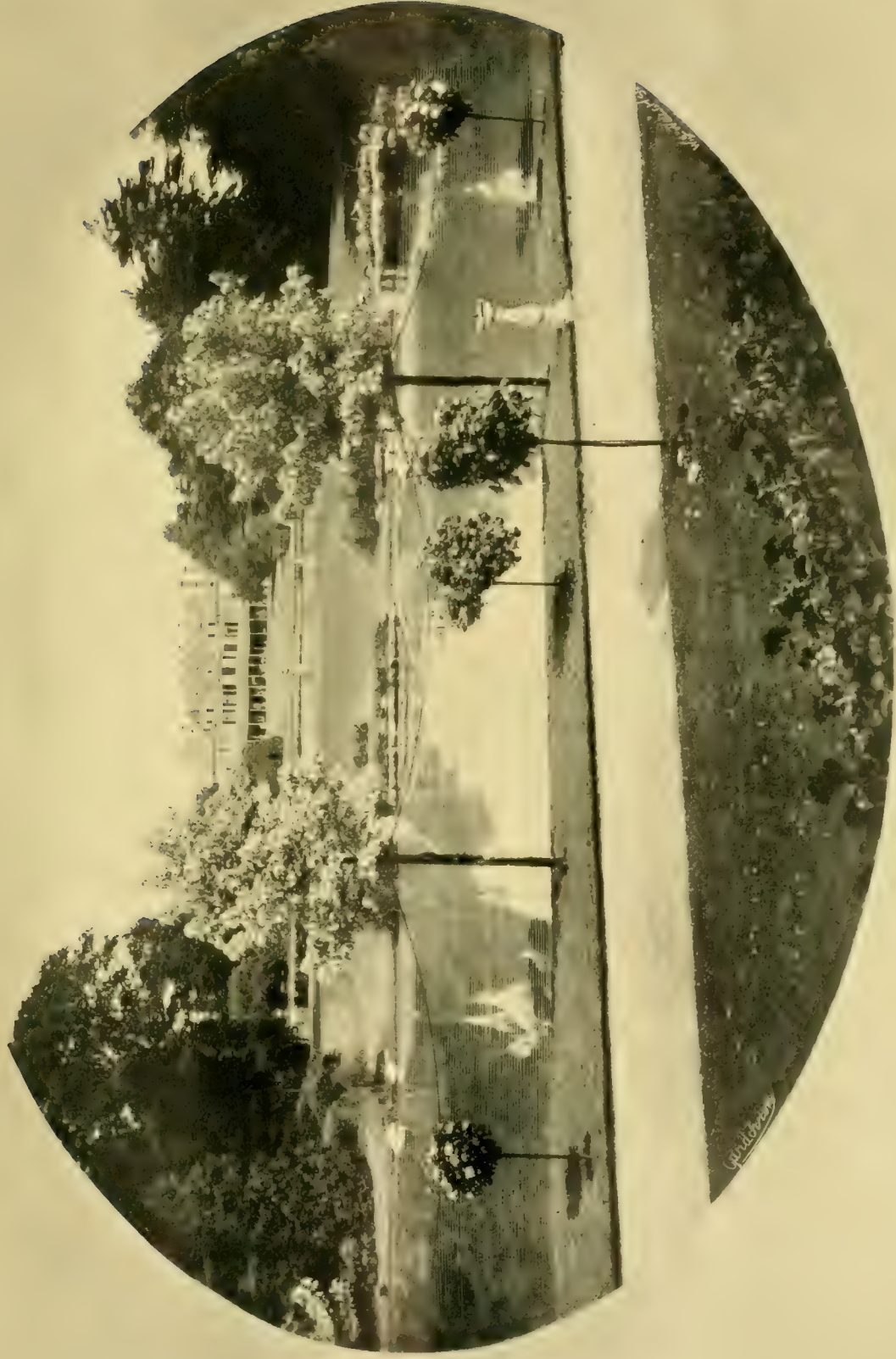
There are, however, some apparent exceptions to this common form of response on the part of most woody dicotyledons to conditions of physical or of physiological drought. Thus

the evergreen trees and shrubs do not ordinarily lose their leaves in winter, although they drop them at other periods of the year. But when they do throw them off, they commonly form an absciss-layer like that of the deciduous trees. This shows that the habit of forming a cork plate is not only very widely spread, at least amongst the dicotyledons, but that it can perhaps be evoked by circumstances other than drought, although this is unquestionably the most common stimulus. As a matter of fact, however, evergreens may respond readily enough to a condition of inadequate water supply. Hollies when transplanted, in dry soils at any rate, often cast off their leaves during the following season. This is due primarily to the shortage of water consequent on the damage unavoidably done to the roots, and it is a well-recognised symptom that the transplanted bush is going to thrive. Of course, it implies that the plant retains enough vitality to enable it to respond to the diminished water-absorption by the formation of a new tissue, the cork plate, which causes the evaporating organs—the leaves—to drop off. Thus, by economising the available supply of water the plant is enabled to carry on its life till the new roots render it capable of providing for the needs of the fresh foliage. It often happens, especially in the case of Hollies, that those individuals which fail to throw off their leaves in this way lose water faster than the roots can absorb it, and so they dry up and perish.

There are, however, other ways in which plants may respond to the lack of water besides casting their leaves. Thus, in some species the leaf surface is greatly curtailed, the foliage even assuming a spiny condition, and this tendency may also extend to the branches, as in the common Gorse or Furze. Or the leaves may be produced, but only enjoy a very transient existence, as in some dry-country species of *Senecio*, in which the functions of the leaves, after their death, are more or less imperfectly discharged by the green stems. Numerous other structural modifications adapted to withstand conditions of limited water-supply will doubtless occur to our readers.

It is of interest to observe that many plants have the property of responding to dry conditions by a change of habit which is suited to the new conditions. Thus the leaf of the common Ash, when growing under the hotter and drier surroundings that prevail in the more southern parts of Europe, is far more leathery than in these islands, whilst at the same time the tree assumes a luxuriance of foliage quite unknown here. Indeed, exposure to similar conditions in Britain would almost certainly lead to defoliation, since the moister climate encourages the formation of a shallower root system.

Temporary drought leading to defoliation is, naturally, far more active in the case of shallow, than in that of deeper-rooted, trees. Limes, Elms, and many others, soon show the bad effects when grown on shallow, sandy soils. This is apt to be aggravated in a climate like ours, for the frequent rainfall enables trees to be grown on situations which would be impossible in a drier and hotter climate. On arid soils special care is needed to prevent the loss of foliage during rainless intervals, especially if the



Designed by H. S. H. H.

VIEW OF BUSHEY HOUSE, HERTFORDSHIRE, THE RESIDENCE OF E. H. CUTHBERTSON, ESQ.

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trees are grown for ornamental purposes. The roots will go where the water is, and if the surface of the ground is kept constantly moister than the subsoil, there the roots will grow, and on that account will be more susceptible to the effect of an intermittent supply.

Doubtless this encouragement of shallow rooting is one of the most frequent causes of the early loss of foliage by the trees of so many of our towns. Of course, smoke and noxious gases are in some districts partly responsible for the premature bareness of the branches, but independently of these evils the planting and treatment are too often carried on as if with the express intention of securing the minimal period of leafage. Grown in a drained soil, the roots are often covered by flag-stones to within a few inches of the trunk, and when water is given at all it commonly takes the form of a mere sprinkling, instead of a good supply at less frequent intervals. In some of the Continental and American towns the ground is sunk round

as the tendency is to flower from the outer growths, a marked point of cultural skill was shown by the middle of this specimen being equally well furnished with flowers. This was done by severing the rhizomes around the central part of the plant, causing new flowering growths to be formed, and thus the whole plant is equally well furnished with rich rose-purple coloured flowers with deep mauve-crimson labellums, and numbering in the aggregate 230, the largest spike bearing 18 blooms. *Lælio-Cattleya elegans*, although originally imported as a natural hybrid between *Lælia purpurata* and *Cattleya Leopoldii*, and in company with *L.-C. Schilleriana* (*L. purpurata* × *C. intermedia*), which for many years was confused with *L.-C. elegans*, has been raised at Westonbirt and several other gardens. The home-raised specimens have in this case, as in others, assisted materially in establishing the records of the imported natural hybrids.

THE ROYAL HORTICULTURAL SOCIETY AND HORTICULTURAL MUTUAL IMPROVEMENT SOCIETIES.—We have received the following communication. "The President and Council of the Royal Horticultural Society, having a very high

a series of typewritten lectures with lantern slides shall be prepared for the use of Mutual Improvement Societies and hired out to them at the lowest possible charges. 7. That any Mutual Improvement Society forwarding to the Secretary of the Royal Horticultural Society a copy of their rules and regulations and the syllabus of their arrangements for the ensuing season, together with a fee of 5s. per annum, to cover incidental expenses, shall be considered to have joined the Union, and be forthwith enrolled therein. The objects in view are:—*a.* To strengthen existing Mutual Improvement Societies. *b.* To promote interchange of lecturers. *c.* To provide interesting lectures where lecturers cannot be obtained. *d.* To increase the number of such societies all through the kingdom, and *e.* To furnish them with an outline of rules, regulations and syllabus. The Secretary of the Royal Horticultural Society, Vincent Square, Westminster, will be glad to hear from the secretaries of all and any Horticultural Mutual Improvement Societies who may be inclined to look favourably on the proposed union. *W. Wilks*, Secretary. By order of the Council, Vincent Square, October 1, 1907. N.B.—The council wish it to be understood that they retain the right to decline (or to determine) the union of any society which possesses a political basis or whose rules appear to them [un]satisfactory."

THE HORTICULTURAL CLUB.—Owing to several horticultural meetings having occurred on the evening of October 1, the house dinner and lecture announced for that date was postponed until Tuesday, October 15, at 6 p.m., when Mr ARTHUR W. SUTTON will lecture on "A Camping Tour from Damascus to Petra in Arabia," and the subject will be illustrated by painted slides from original photographs.

THE JAPAN BULB BUSINESS.—To what extraordinary dimensions the Japan bulb business has attained may be proved by a few interesting figures sent us by Mr. ALFRED UNGER, proprietor of the business of Messrs. BOEHMER & Co., Yokohama. The steamer "Monteagle," of the Canadian Pacific S.S. and Railway Company, which left Yokohama on August 27 for Vancouver, B.C., carried 4,699 cases of bulbs, or about 360 tons measurement—one ton = 40 cubic feet. Taking as an average 225 bulbs per case, this steamer contained one million fifty-seven thousand two hundred and sixty-five (1,057,265) bulbs. The principal portion of the shipment was entered for the United States and Canada, although some of the bulbs will eventually reach Europe by this route, partly direct, via Montreal, and partly by transshipment in New York. The bulbs shipped at this season are principally of *Lilium longiflorum* and its varieties. At fig. 107 we have reproduced a photograph kindly supplied us by Mr. A. DIMMOCK, and which affords a view of part of the trial grounds belonging to the Yokohama Nursery Company, Limited. The plants under cultivation are *Lilium longifolium giganteum*.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—We are informed that the 21st anniversary dinner of this Society will be held at the Holborn Restaurant, High Holborn, W.C., on Friday, November 1st, at 6.30 p.m. Sir ALBERT K. ROLLIT, LL.D., D.C.L., Member of the Council of the Royal Horticultural Society, will preside. Tickets may be had from the Secretary, Mr. W. COLLINS, 9, Martindale Road, Balham, S.W.

NEW STATE FOREST.—An estate of 12,000 acres, known as Inverliver, in Argyllshire, has just been purchased by the Government for the purpose of converting it into a State forest station, at a cost of about £30,000. It is situated on the shores of Loch Awe, in one of the most sparsely populated districts of the Highlands, and is surrounded by mountains and moorland.



FIG. 107. —*LILIAM LONGIFLORUM GIGANTEUM* AS CULTIVATED FOR EXPORT BY THE YOKOHAMA NURSERY CO., LTD., YOKOHAMA.

the base of each tree, so that a proper amount of water can readily be supplied. Although our own climate is, on the whole, favourable to their growth, we might with advantage exercise more care in preventing the premature defoliation of the ornamental trees in urban districts if we would pay a little attention to the elementary facts of practical plant physiology.

OUR SUPPLEMENTARY ILLUSTRATION.

The noble specimen of *Lælio-Cattleya elegans*, depicted in our Supplementary Illustration, was shown by Major G. L. HOLFORD, C.V.O., C.I.E., Westonbirt, Tetbury, at the Royal Horticultural Society's meeting held on August 21 last, and for which a Silver-Gilt Lindley Medal was awarded. This specimen was considered to be not only the finest of its kind ever shown, but also, from a cultural point of view, one of the best Orchids ever staged. The specimen was grown from a comparatively small plant, and

opinion of the benefits accruing to gardeners throughout the kingdom by the establishment and maintenance of Horticultural Mutual Improvement Societies, and being desirous of promoting and assisting them in every reasonable way, have resolved to form a Union of Horticultural Mutual Improvement Societies; and further, 1. That a register of Horticultural Mutual Improvement Societies shall be kept at Vincent Square. 2. That a register of competent lecturers, with their addresses, and as far as may be of the subject of the lecture, shall be kept at Vincent Square. 3. That a copy of the rules and regulations and of the current seasons arrangements, or syllabus of each Mutual Improvement Society, shall be kept at Vincent Square. 4. That 1, 2, and 3 shall be open to inspection at any reasonable hour by the secretary of any Mutual Improvement Society joining the Union. 5. That an annual conference of three delegates from each Mutual Improvement Society joining shall be held at Vincent Square at 2 p.m. on the second day of the Annual British Fruit Show or at such other time as may be preferred. 6. That

MR. W. E. BROADWAY, who left the Royal Gardens, Kew, in 1868 to take up a position in the Botanical Gardens at Trinidad, and has since held a similar post in Grenada, has now returned to Trinidad, where he will reside at Circular Road, Belmont, Port of Spain. Mr. BROADWAY informs us that he will be glad to supply botanical and natural history specimens obtainable in Trinidad to anyone requiring to purchase them.

FORESTRY IN THE NORTH OF SCOTLAND.—The Teaching Staff Committee of the Aberdeen and North of Scotland College of Agriculture, on Friday, September 27, recommended to the Governors the appointment of a lecturer in forestry, whose duties would be, in the first instance, to lecture in the principal forest areas in the North of Scotland. The committee recommended that the appointment be given to Mr. WILLIAM DAWSON, M.A., B.Sc., Aberdeen, which was adopted. Mr. DAWSON, who has studied forestry in Germany and France, has been specially engaged in the study of diseases affecting trees.

GOOSEBERRY-MILDEW.—Our correspondent, Dr. PLOWRIGHT, informs us that the County Council of Norfolk have distributed the accompanying handbill in the county villages, together with leaflet No. 195 of the Board of Agriculture and Fisheries—American Gooseberry-mildew (*Sphaerotheca mors-uvæ*, Berk.). Unfortunately the disease has already made its appearance in the large Gooseberry-growing districts of the county.

"The Board of Agriculture have made an order which applies to the County of Norfolk as from August 1st, 1907, and is intended to prevent the spread of the serious disease known as American Gooseberry-mildew (*Sphaerotheca mors-uvæ*), which has recently been detected in this country.

The disease attacks both Gooseberry and Currant bushes (possibly Raspberries).

The following are the chief provisions of the new order:

NOTIFICATION OF DISEASE.

The occupier of any premises on which there is a bush which is diseased or suspected of being diseased shall forthwith notify the fact to the Clerk to the Local Authority, and where practicable a specimen showing the disease or suspected disease shall accompany the notice.

Measures for Prevention of the Spread of Disease.

1. The local authority on receiving in any manner notice of the existence or supposed existence of disease shall take such steps as may be necessary to determine whether the disease exists, and the area covered by diseased bushes, or by bushes to which the disease is likely to spread, and shall cause a notice to be served on the occupier of any land within that area requiring him to adopt such measures for prevention of the spread of the disease as are authorised by this article.

2. A notice under this article shall require—

(i.) the immediate destruction by burning or other effective method of all diseased bushes, including the fruit on such bushes;

(ii.) the thorough spraying as soon as possible with a solution of copper sulphate (containing at least one pound of copper sulphate to a gallon of water) or with some other fungicide approved by or on behalf of the local authority for that purpose of the site of any bush that has been destroyed;

(iii.) the thorough spraying of all Gooseberry and Currant bushes on the area defined in the notice with a fungicide approved by or on behalf of the local authority for that purpose and so that the spraying shall be carried out at such time or times as an inspector of the local authority shall direct and to his satisfaction;

(iv.) that no Gooseberry or Currant bush, or any part of any such bush shall be removed or permitted to be removed out of the area defined in the notice except with, and subject to the conditions (if any) of, a license authorising such removal, but this restriction shall not apply to fruit of a bush that is not diseased.

3. Any notice may be altered or withdrawn by the local authority if and when they are satisfied that this may be done without risk of the spread of disease.

POWERS OF ENTRY.

Any officer or inspector of the Board or the Local Authority may enter on any land or premises and examine any Gooseberry or Currant bushes for the purposes of this order.

Any failure to comply with the order, or failure to notify disease or suspected disease, or any act obstructing or impeding an inspector involves liability to a penalty of £10.

It is most important that any case of disease should be detected and reported at once, in order to prevent its spreading. Occupiers who fail to do so and to take the steps required by the order may incur serious losses, and risk infecting their neighbours' crops also. It is obviously to the grower's advantage to notify suspected cases at once. Generally (but not always) the disease appears first in damp and low-lying places, and attacks the young shoots, but is most infectious.

An illustrated leaflet to assist growers in identifying the disease is sent herewith.

All growers are requested to make this order known as widely as possible, in order to assist in the detection of disease."

PRESENTATION.—On the occasion of the King's recent visit to Lord and Lady SAVILE at Rufford Abbey, Notts, His MAJESTY presented Mr. J. DOE, the head gardener, with a gold watch bearing the Royal monogram and crown. His MAJESTY also expressed to Mr. DOE the great pleasure he had derived from the gardens during his stay, and congratulated him on their condition. Mr. DOE has had charge of Rufford Gardens for upwards of 13 years, and has done much to improve their appearance. He is also a very successful exhibitor of fruit.

BULBS FOR THE LONDON PARKS.—Active preparations are now being made in the London parks for the planting of the spring-flowering bulbs, and we are informed that the London County Council has ordered, through Messrs. WM. CUTBUSH & SON, of Highgate Nurseries, London, N., a supply of hundreds of thousands of Hyacinths, Tulips, Daffodils, Crocus, and the many other varieties of bulbs required for the various floral displays afforded by the 28 parks and other open spaces throughout the metropolis, for which the Council is responsible to the citizens of London. For furnishing the London Royal Parks, Messrs. JAMES CARTER & CO., High Holborn, have been commanded by His MAJESTY'S First Commissioner of Works to supply the enormous number of 66,000 Hyacinths, 150,000 Tulips, 133,000 Narcissus and Daffodils, 116,000 Crocus, and 194,000 Lilliums, Snowdrops, &c.

THE CULTIVATION OF IRIS KÄMPFERI.—Mr. E. V. HALLOCK, writing in the *Weekly Florists' Review* of August 22, concerning Iris Kämpferi, states that it serves to illustrate some common fallacies as regards the necessary precautions for successful cultivation of plants. "In 1878 we bought Professor PRINGLE'S entire stock of this plant. There were many very fine varieties, and many of the kinds are sold to-day. We noticed that the clumps, when being sub-divided for planting, had a large centre that was entirely dead or dried up; in many you could put your hand right through the centre. This came from leaving the clumps too long before sub-dividing. We were told that this plant required damp, low ground, and if it could be covered by water occasionally it would be better. We planted them on common Long Island plains soil, 2 feet of soil above clear sand, 50 feet above water. WILLIAM FALCONER, in describing our plantation of Iris, said he walked 'waist deep' through the plants. When transplanting a field of these, we used a cart and wheelbarrows, and sub-divided them with an axe. One year we left several hundred plants along a driveway on top of the ground when transplanting in the spring. In the fall these plants were alive. Personally, I don't think it is necessary that Iris Kämpferi should be flooded with water to produce a good growth." Much the same thing can often enough be seen at home. Thus it is commonly stated that *Pratia angulata* should be grown in a damp, partially-shaded position. But at the Edinburgh Botanic Garden there is a magnificent patch of this plant growing fully exposed to the sun on a dry, sandy bed; and precisely the same conditions have been found successful in cultivating the species at the Physic Garden at Chelsea.

SAPONARIA VACCARIA.—An article in the *Revue Horticole* suggests the more extensive cultivation of *Saponaria vaccaria* for cut flowers. The blossoms recall those of *Gypsophila*, but they are of a Rose colour, and as large as those of *Silene pendula*. By making fortnightly sowings from February to July it is possible to maintain a succession of bloom from May till October. If the sprays are cut when the flowers are commencing to unfold, they will open completely in water, and they have the merit of lasting well under these conditions.

PINEAPPLES DAMAGED BY BUTTERFLIES IN TRINIDAD.—The Superintendent of the Botanical Department, Trinidad, Mr. J. H. HART, draws attention to damage caused to Pineapples by a small "blue" butterfly belonging to the family *Lycenidæ*. The insect lays its eggs in the flower of the Pine, and, on development, the larvæ eat away the fleshy part of the fruit, causing a reddish gummy matter to exude. The Pine becomes deformed and useless when severely attacked. The life history of the insect was worked out in the laboratory of the Department.

THE DOUBLE SWEET ROCKET (*Hesperis matronalis*) is not seen as often as it deserves. Although the species is often grown in cottage gardens, it is well worthy of a place in more pretentious borders, where its pleasing form and long period of blooming should render it more acceptable than many plants which are often found there. Many of these old-fashioned flowers of easy cultivation are too often neglected, perhaps because each is regarded as "everyone's plant"; but the gardener's art should not stop short at raising the conventional border plants, and those rare or difficult species which are the delight of many amateurs; it should utilise even common things, if they satisfy the requirements of good habit and long duration of blooming. The Sweet Rockets, with their white, Rose, or Lilac flowers, fulfil these conditions better than many which occupy, less worthily, their places. In this connection it may be remarked that some of our English wild flowers are far more beautiful than many exotics which are grown at much trouble and expense. The writer recollects a visitor to his greenhouse stopping before a pan of Bog Pimpernel (*Anagallis tenella*), which was covered with its pink blossoms, and anxiously inquiring if the plant could be procured from a certain distinguished firm of nurserymen. On being informed that it could be obtained from almost any Surrey common, all the interest at once disappeared. This vulgar prejudice in favour of the merely uncommon or expensive article is not an easy one to combat; but there are many persons who love flowers for their own sake, and a little education in the direction of showing what can be done with some of our native species would certainly not be thrown away, quite apart from the fact that they, no less than plants of foreign extraction, may well furnish the sources from which "improved" varieties may be raised.

PURCHASING BULBS.—We have received a letter from Mr. ROBERT SYDENHAM in which he relates circumstances in his own experience which go to prove that bulbs purchased direct from Holland are not cheap merely because they are sold for lower prices than are charged by English firms. As was pointed out in our article published in the issue for September 21 last, the bulbs may be as inferior in quality as they are lower in price. Goods are not dear merely because their prices are high in comparison with others, or cheap because they are lower. It is usually a question of quality.

THE HARDY FLOWER BORDER.

PAPAVER NUDICAULE.

THIS Poppy is a biennial, flowering the second year, and one that must be sown where it is intended it should flower, or, failing that, transplanted the first year. The first is the better plan, the least interference with the roots having a bad effect on the flowering of the plant. For this reason the strongest seedlings must be transplanted to the places in which they are to flower early in the first year. As a pot plant *Papaver nudicaule* is not to be recommended. F.M.

RUBUS BAMBUSARUM (Foche).

THIS fine plant, from China, was discovered by Dr. Augustine Henry, and was introduced to this country through Mr. E. H. Wilson, when collecting for Messrs. James Veitch & Sons. Our illustration shows the general habit of the fruit and foliage. The leaflets in shape somewhat resemble a Willow leaf, and are dark green above, but white or dun-coloured underneath. They are said to be used as a substitute for Tea in some parts of China.

FLORISTS' FLOWERS.**PÆONY CULTIVATION IN AMERICA.**

IN recent years the Pæony, in its many improved varieties, has taken a high position in English, American, and French gardens. In America, at the end of the month of June this year, the American Pæony Society inaugurated at Ithaca, New York State, a conference combined with a Pæony show. Mr. Ward, a Pæony raiser and President of the Society in question,

research garden at Ithaca. Further, a committee will be appointed for the study of Pæony diseases, and another to decide as to the merits or otherwise of the new varieties. Mr. J. E. Coit, who has been engaged for a long period with the study of Pæonies, spoke at great length concerning the classification of these plants, of which he has worked out a perfectly new system. Mr. Coit divides Pæonies into six types, including the single, of which Fiancée is the type; the Japanese, of which the variety Glory is the type; the bomb form, such as is seen in the variety Charles Binder; the half-double form (the confusion of names is greatest in this class); the crown form (Kelway's Princess Beatrice is a good type of this class); and the Rose form, of which the type is Avalanche.

TREE OR PERPETUAL-FLOWERING CARNATIONS.

IN some gardens the cultivation of Carnations of all sections is rendered impossible by reason of the presence of the fungus *Helminthosporium echinulatum*. In cases of slight infection by this fungus, a quarter which has not been previously planted with Carnations or Pinks should be selected, and soil for potting should be brought from totally unaffected sources. A common cause of failure in the culture of Carnations under glass arises from excessive warmth in the glasshouse, thus causing a too rapid development of growth, with the result that the flowers have not the strength to expand, and the plants become weak and offer a ready prey to the fungus.

If the propagation of Carnations is undertaken in early autumn (the best season), a hotbed should be made with fresh tree-leaves, or the unfermented leaves of the previous year, and stable dung, sufficiently large as to afford a bottom heat of 78°-80°. Such a hotbed may be constructed to accommodate one single-light frame, or several, according to requirements. On the surface of the hotbed a layer of rotten dung should be placed; this should be made level, and on this a mixture of leafmould, disused hotbed soil, and a small quantity of sand should be laid to the depth of 1½ inches. Finish the surface with an inch layer of sharp sand. The cuttings should be taken from plants growing in the open ground, and they should consist of the lowermost side shoots of the developed flowering stems that are neither too long nor too short. Water the cuttings after they are inserted, and shade the frame only during the hottest hours. At first the cuttings should be syringed with sun-warmed water almost hourly, by which means the formation of roots will be encouraged, and in about 14 days a root-system will be completed. Ventilation should be afforded at this stage, and, under favourable conditions, the lights may be dispensed with by night. In about one week the plants may be set out in well-prepared beds 8 to 10 inches apart. The stopping of the plants should be carried out at the end of the month of May, and this will favour the development of bushy plants. Young Carnations intended for pot culture should be taken up with great care in August and be set in pots of suitable sizes, in a mixture consisting of loam two-thirds, leaf-mould one-third, a small quantity of sharp sand and horn shavings. The pots, which should be afforded plenty of drainage material, are best placed on a coal-ash bed in a sheltered spot. By moderate applications of water and repeated syringings, fresh roots will soon develop. The plants should, if convenient, be placed in October in pits or houses having portable top lights. The average temperatures to induce the greatest abundance of bloom may range from 44° to 48° Fahr. Owing to lack of room under glass in the winter season, propagation may be undertaken in January, February, and early in March, and the plants thus propagated will grow quite satisfactorily. F. M.



FIG. 108.—*RUBUS BAMBUSARUM*, A CHINESE SPECIES.

The plant, which is of a vigorous constitution, is adapted for pillars, the long branches reaching a length of from 10 to 12 feet in one summer, and the black edible fruit hangs in effective clusters, which compensate for the somewhat obscure blossoms. The specimen figured was obtained from a plant exhibited by Messrs. Jas. Veitch & Sons at the Royal Horticultural Society's meeting on August 20, when the species was awarded a First Class Certificate.

stated as his opinion that the existing crosses and seedlings would not be productive of varieties showing better characteristics than the parents, and that, in order to improve the race, "new blood" must be introduced. In endeavouring to raise new varieties of these flowers, a saving of time and labour would result if a better and a fuller knowledge of the materials already existing were generally known. Each member is entitled to send one plant to the

THE FERNERY.

SOME POLYPODIUMS IN TRINIDAD.

In the old Botanic Gardens of Trinidad there exists a strong natural growth of several Polypodiums, self sown in the axils of the lower leaves of various Palms of about 16 years' growth. These Ferns are particularly effective during the months of July to November, when the fronds clothe the Palm stems with a mass of drooping, green fronds. The West Indian varieties are *Polypodium aureum*, Linn., and its varieties *reductum*, *areolatum*, *pulvinatum*, and *attenuatum*, H.B.K., and the grand old *Phlebodium*, *Polypodium decumanum*, of Willd., with fronds 8 to 10 feet in length. Besides, we have the *Polypodium Phymatodes*, of Ceylon and Polynesia, which has become so well naturalised that it may be seen growing upon the stems of trees in every direction, showing sporiferous fronds ranging from pinnate form of 2 to 2½ feet long to a single simple frond of some 3 inches in length. *Polypodium incanum* and *P. vacciniifolium* are also common "Palm-stem" plants. In the dry season most of these are deciduous, and only their strong, creeping, scaly root-stocks are to be seen, *P. Phymatodes* being only partially so, but *P. incanum* and *P. vacciniifolium* adapt themselves to the dry season by curling up into various moss-like masses. Two of the simple leaved Polypodiums join the above in *P. irioides* and *P. phyllitidis*, the first of which is partly naturalised and keeps company with the native *P. phyllitidis*. The mainland *P. percursum*, Cav., is also well naturalised in the garden, mostly on stems and branches of the large trees, but is threatened to be outgrown by *P. Phymatodes*.

These species of the section *Phlebodium* are, however, the most numerous and ornamental, forming a striking feature of the garden. *Nephrolepis exaltata* and its congener, *N. sesquipedale*, Jenm., are also very common as Palm-stem plants, and Jenman noted the fact in his *Ferns of the West Indies and British Guiana* in his description of *N. sesquipedale*, Jenm., when he described it as being a common species in British Guiana, abounding in great profusion in the decaying debris of spathes and spadices in the crown of *Maximiliana regia*, and it is found in the same position in Trinidad. *J. H. Hart, Trinidad.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

BURNING BUSH (See p. 240).—I have always found that *Rhus cotinus* is known as the Burning Bush. *J. G. Hill, Greyside, Muswell Hill, N.*

HYDRANGEA HORTENSIA.—When paying a recent visit to Delamere House, near Northwich, the seat of Major Wilbraham, I saw some very fine plants of *Hydrangea Hortensia* growing in tubs on the terrace. It may interest your correspondents, Mr. A. R. Pearce and Mr. E. S. Pigg, who wrote on this species in the issues for August 24 and September 14, if I give some particulars of the plants at Delamere House. Two of the specimens measured 5 feet 6 inches in height and 4 feet 6 inches in diameter, and were masses of flower. At the time of my visit one plant bore 288 and the other 274 fully-expanded inflorescences. The plants, I was given to understand, are placed in a shed during the winter months. Mr. John Thompson, the gardener at Delamere House, has about 50 splendid specimens, but the two plants I have mentioned are the largest and best. *Calanthes* are cultivated well in these gardens, some of the pseudo-bulbs measuring quite 10½ inches in length and 8 inches in circumference. Every plant is showing its flower-spikes. *Chrysanthemums* are another prominent feature at Delamere House. *P. Roberts, Stoke Edith Park Gardens, near Hereford.*

THE GATHERING AND STORING OF FRUIT.

It is very important that Apples and Pears should be perfectly dry when they are gathered for taking into the store-house or fruit-room. It is equally important that the fruits should be handled with great care, and laid in shallow baskets as the work proceeds. The finest specimens should be laid one layer deep on the fruit-room shelves to ripen. When fruits are gathered in the full sunshine, they "sweat" only for a very short period; at the same time, the fruit-store must not be closed, but provision made for the escape of moisture by keeping the room well ventilated. The sweating process over, the fruits will require looking over occasionally in order to remove any that are not perfect specimens, or any that show any signs of disease or decay. As the season proceeds and the store becomes filled, the time of year approaches when it is necessary to close the structure. In a good fruit-room, built on approved methods, it should be possible to keep Apples through the severest winters without the help of artificial heat or internal coverings. Bare lath shelves of odourless wood answer best, and it is not advisable to place the fruits on straw or cover them with such material. Apples can be kept in a very much lower temperature than Pears. It is necessary when Pears are approaching to ripeness, and in order to bring out those good qualities which many varieties possess, that they should be removed to a warmer, drier, and brighter place some time before they are to be eaten. Choice fruits are sometimes picked in a hurried and ill-considered manner. In order to ascertain when they are fit to be gathered, they need to be tested by raising a few of the fruits quickly in the palm of the hand to a horizontal position, and if under such circumstances they will part readily from the tree, gathering may be commenced. The experienced gardener knows fairly well about the time each variety should ripen, and accordingly he knows when to apply the test. Some of the more tender varieties of fruits, including Plums, Peaches, and Nectarines, may be gathered just before they are perfectly ripe and taken into the fruit-room where they will keep in good condition for several days, thereby prolonging the season, and therefore preventing waste. If Plums are gathered when perfectly dry, they may be kept for a considerable period if they are first wrapped in silvered paper and stored in a warm, dry place. The skin of a ripe Pear or Apple becomes of a richer tint, and the perfume of the fruit is at its best when it is really fit to eat. The common practice of pinching a fruit near the stem in order to ascertain if it is ripe should be avoided. *W. H. Clarke, Aston Rowant Gardens, Oxon.*

HORTICULTURAL RETURNS.—The remarks on this subject on p. 236 are forceful and to the point; whether they will induce an alteration in the method of tabulation adopted by the Board of Agriculture remains to be seen. Several large fruit growers have sent their forms to me this season and asked for advice on the matter, while others, to save trouble, have simply given their returns under "other kinds," both in small fruits and orchards. The result will be, as far as can be seen at present, more misleading and inaccurate than those obtained under the old form. Beyond that, even if the method is altered another year, the returns for the present year cannot be corrected until the following one, so that next year's agricultural tables will not, as regards the fruit average, be comparable with either the preceding or following returns except in the totals. A brief explanatory paragraph would render clear what is really required in the case of a mixed plantation. If, for example, Apples, Pears, Plums, with Gooseberries, Currants, Raspberries, or Strawberries between them constitute the mixture in question, it should be known what is the total number of plants of each kind, and the distances they are set apart. The area occupied by an individual of either kind multiplied by the number gives the total area occupied by the respective kinds. It is such an obvious and simple piece of arithmetic that it would seem superfluous to mention the matter, but the enquiries I have received prove that the officials of the Board of Agriculture have failed to make the subject clear, while if their instructions are taken literally the whole affair becomes an absurdity, as was pointed out in the letter in last week's issue, to which I have already referred. The incomplete and inconsistent character of these

official returns in relation to fruits was brought under the notice of the Board over 16 years ago by Mr. George Gordon and myself as representing a large party of fruit growers, and the necessity for alteration was freely admitted. Since that time the subject has been repeatedly mentioned in communications to the Board and in conversation with the late Mr. Hanbury, Major Craigie and Professor Somerville, and in every case suggestions have been received with courteous attention. There, unfortunately, the matter has rested, and the same applies to the recommendations of the "Fruit Enquiry" Committee. Progress is blocked somewhere in the complicated official system, but where, and how, and why, it seems impossible for outsiders to ascertain, as even acknowledged experts appear to be seldom consulted. *R. Lewis Castle.*

DEFICIENT RAINFALL.—Your readers (especially in the west) will probably be surprised to learn that the rainfall of the nine months just ended was, up to noon on Tuesday last, the lowest I have recorded since I came to Kent in 1899. Such a combination of small rainfall and low day temperatures must be very rare. Below I give the eight years in question: the excess of 0.09 inch over 1901 was caused by rain on Tuesday night. January to September inclusive: 1900, 17.26; 1901, 13.76; 1902, 14.13; 1903, 26.43; 1904, 17.32; 1905, 17.59; 1906, 14.64; 1907, 13.85. *Alfred O. Walker, Kent.*

CUPRESSUS LUSITANIA (CEDAR OF GOA).—This Cedar seems to be a very rare plant in this country, and it would be interesting to know if there are any specimens in the more favoured parts of Great Britain. A young tree was brought home by my employer early in the spring from Bussaco, where it is said to grow at a considerable altitude, and at certain periods of the year the temperature falls rather low. On the first appearance of this young tree it impressed me as being very similar to *Cupressus funebris*, but on closer examination it is quite distinct, being much finer in its growth and having a more glaucous tint. It is evidently a tree of rapid growth judging from the previous season's growth this tree had made, and, if it is not generally hardy, it would probably thrive and make a valuable and attractive lawn specimen in the counties of Devon and Cornwall. *W. H. Clarke, Aston Rowant, Oxon.*

SOCIETIES.

ROYAL HORTICULTURAL.

OCTOBER 1.—The ordinary fortnightly meeting of the Committees of this society took place on Tuesday last, when a very good display was made, in which hardy flowers, collections of fruit and fruit-trees, and a collection of species of *Vitis* were prominent features.

The ORCHID COMMITTEE recommended two Awards of Merit and one Botanical Certificate to novelties among Orchids, and the FLORAL COMMITTEE recommended two First-Class Certificates and five Awards of Merit to novelties in miscellaneous flowering and foliage plants.

A joint Committee of a deputation from the Floral Committee and from the National Dahlia Society recommended seven Awards to new Dahlias.

In the afternoon a lecture on "The Cultivation of Plants by Electricity" was delivered by Mr. B. H. Thwaite.

Floral Committee.

Present: W. Marshall, Esq. (chairman), and Messrs. C. T. Drury, H. B. May, T. W. Turner, G. Reuthe, Chas. Blick, Jas. Douglas, W. T. Ware, Chas. Dixon, H. J. Cutbush, J. T. Bennett-Poë, Chas. E. Pearson, W. P. Thomson, E. H. Jenkins, W. J. James, J. F. McLeod, R. W. Wallace, M. James, R. C. Notcutt, J. W. Barr, A. Turner, James Hudson.

MESSRS. JAMES VEITCH & SONS, Ltd., King's Road, Chelsea, showed an exhibit of ornamental Vines, embracing 62 distinct species and varieties, many of them being new to gardens. The majority of the new species are introductions from China, through their collector, Mr. E. H. Wilson, and those shown for the first time were *Vitis sinensis repens*, *V. tomentosa*, *V. flexuosa chinensis*, *V. Delavayana*, and *V. species nova*. The habit of the various plants, as is to be expected from such a representative

collection, varied greatly, and, whilst some plants attained to a height of 12 or 14 feet, others were not more than 2 or 3 feet high. The following were carrying handsome autumn-tinted leaves:—*V. flexuosa* major, *V. amurensis*, *V. armata*, *V. Brandt* (a form of *V. vinifera*), *V. vinifera purpurea*, *V. armata Veitchii* (of rich, red colouring), *V. Henryana*, *V. heterophylla variegata* (the variegation is white and green), *V. Thunbergii* (one of the showiest of the genus), and *V. megalophylla*. (Gold Medal.)

A very beautiful display of Roses was shown by Messrs. WM. PAUL & SON, Waltham Cross, Herts. The exhibit occupied the whole of one side of a long central table. The majority of the blooms were shown in baskets, but these were interspersed with vases, and at the back were epergnes. The good quality was remarkable for this late season, and the varieties included nearly 100. Prominent blooms were those of Warrior, Pharisæer, Le Progrès, Earl of Warwick, the new Hugo Roller, Comtesse de Cayla (a China Rose of exquisite colouring), Mad. Abel Chatenay, &c. (Silver-Gilt Flora Medal.)

Mr. GEORGE PRINCE, Longworth, Berks., showed many beautiful blooms of Roses, including choice specimens of the white variety named after Frau Karl Druschki, White Maman Cochet, and a new variety named Mme. Constant Souper, with deep yellow petals slightly edged with rose-colour. (Bronze Flora Medal.)

Messrs. FRANK CANT & CO., Colchester, showed bunches of Roses in variety, all of fresh and clean appearance, and including the choicer kinds for garden decoration. (Silver Banksian Medal.)

Messrs. D. PRIOR & SON, Colchester, exhibited a choice assortment of Roses, exhibition boxes, vases, and epergnes being filled with splendid blooms of such kinds as Frau Karl Druschki, Maman Cochet, Mme. de Watteville, White Maman Cochet, The Bride, Caroline Testout, &c. (Silver Banksian Medal.)

Messrs. H. B. MAY & SONS, Edmonton, showed varieties of Veronicas of the Andersoni type and about 90 varieties of hardy Ferns. (Silver Flora Medal.)

Messrs. WM. BULL & SONS, King's Road, Chelsea, again showed ornamental-leaved species of exotic plants as a setting to a bank of Orchids. (Bronze Flora Medal.)

Messrs. R. H. BATH, LTD., The Floral Farms, Wisbech, showed Chrysanthemums of the market type and sprays of perennial Asters in variety. Perle Chatillonaise, Nina Blick, Le Pactole, Roi des Blancs, Champs d'Or, Ryecroft Crimson, and other well-known varieties of early-flowering Chrysanthemums were noticed. (Silver Banksian Medal.)

A very extensive and prettily-arranged exhibit of Dahlias was shown by Messrs. T. S. WARE LTD., Ware's Nursery, Feltham. The display occupied a long table that ran the whole length of the hall at the end opposite the clock. We have no space to enumerate the many varieties shown, but may state that they included excellent examples of most of the best kinds in commerce. With the Dahlias were Asters, Chrysanthemums, coloured foliage, Grasses, &c., used for relief, and the whole was edged with a row of *Isolepis gracilis*. (Silver-Gilt Flora Medal.)

Mr. M. V. SEALE, The Nurseries, Sevenoaks, exhibited varieties of the Pompon-Cactus type of Dahlias. The flowers are about half the size of those of ordinary Cactus Dahlias. Among notable varieties may be instanced Mignon (pink), W. Marshall (crimson), Tom-Tit (pink), Coronation (scarlet), Little Albert (yellowish bronze), and Mary (white, tinted with red). (Bronze Flora Medal.)

Mr. J. T. WEST, Tower Hill, Brentwood, displayed Dahlias of the Pompon and Cactus-flowered types in most of the choicer varieties. The exhibit was very prettily arranged. (Silver Banksian Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, again showed a selection of many of the best varieties of Cactus and Pæony-flowered Dahlias. The exhibit was of great extent, and displayed in a pleasing manner. (Silver-Gilt Banksian Medal.)

Messrs. JAMES STREDWICK & SON, Silverhill Park, St. Leonards-on-Sea, staged 12 varieties of Cactus Dahlias, most of which have been described in our columns.

Messrs. G. VAN WAVEREN & KRUYFF, Sassenheim, Holland, presented a number of single varieties of the Pæony-flowered Dahlias. (Bronze Flora Medal.)

Messrs. HUGH LOW & CO., Bush Hill Park, Enfield, exhibited plants of *Nephrolepis exaltata* Whitmannii, a large specimen of *Chironia exifera*, crowded with its pretty pink-coloured flowers, and a pan of *Rochea falcata* with brilliant red inflorescences.

Messrs. GUNN & SONS, Olton, Birmingham, showed border Phloxes, of which flowers this firm makes a speciality. The manner of staging was pleasing, hanging baskets filled with these flowers being very pretty. Almost all the best varieties were included in the display, and although we have seen them finer in some seasons, the exhibit ranked as one of the most interesting in the exhibition. (Silver-Gilt Flora Medal.)

Messrs. W. CUTBUSH & SON, Highgate Nurseries, London, N., staged an attractive exhibit of hardy flowers on the floor near to the entrance. In the centre of the group was a tall bamboo epergne filled with long spikes of *Liatris pycnostachys*, and on either side smaller stands accommodated such flowers as Tritomas, perennial Asters, Sunflowers in variety, *Hemerocallis* Dr. Regel, *Aster Linosyris*, *Eupatorium purpureum*, &c., with Phloxes, Pyrethrums, *Polygonum amplexicaule*, *Physalis Franchetii*, and many other subjects forming a groundwork. Messrs. CUTBUSH also showed as a table group vases of Carnations, and between these were flowering sprays of the dwarf *Polyantha* Rose Mrs. F. W. Flight, and at one end were vases of the new *Astilbe* (*Spiræa*) Queen Alexandra. (Silver-Gilt Banksian Medal.)

Asters of the border type were shown in great variety by Mr. AMOS PERRY, Enfield Chase, Middlesex, in addition to many other seasonable garden flowers, including *Erigeron hybridum*, *Senecio ciliyorum*, *Rudbeckias*, *Tritomas*, *Amaryllis Belladonna*, &c. (Silver Flora Medal.)

Mr. F. BRAZIER, Caterham, set up a very large exhibit of perennial Asters, Chrysanthemums, Scabiosa, Roses, Phloxes, &c. (Bronze Flora Medal.)

Messrs. JOHN PEED & SON, West Norwood, London, S.E., showed a number of Alpine plants in small pots and pans, with *Clematis*, *Lobelia cardinalis*, *Campanulas*, *Veronicas*, etc., in flower at the back.

Mr. G. REUTHE, Hardy Plant Nursery, Keston, Kent, showed autumn-flowering Colchicums, *C. gigantea*, *C. Bornmuelleri*, *C. speciosum album*, &c., *Liliums*, a batch of *Nerine coruscans*, Asters, Phloxes, &c.

Messrs. BARR & SONS, King Street, Covent Garden, London, displayed an assortment of seasonable hardy flowers, including perennial Asters, Phloxes, Sunflowers, *Sedum spectabile*, *Centaureas*, *Gladioli*, and early-flowering varieties of Chrysanthemums. (Bronze Flora Medal.)

Mr. R. C. NOTCUTT, The Nursery, Woodbridge, showed border flowers in variety, plumes of the Pampas Grass (*Gynerium*), *Liliums*, Asters, and tall Sunflowers overhung dwarfier subjects such as *Anemones*, *Roses*, *Phloxes*, *Romneya Coulteri*, *Statice*, &c. (Bronze Flora Medal.)

Messrs. DOBBIE & CO., Rothesay, N.B., and Mark's Tey, Essex, exhibited a remarkably fine strain of *Scabiosa* (see Awards), a new crimson-coloured Cactus Dahlia named Dreadnought, and a selection of *Montbretias*. (Silver Flora Medal.)

A very fine hybrid *Nerine* was displayed by J. T. BENNETT-POE, Esq., Holmewood, Cheshunt (gr. Mr. Downes). The petals were much crimped and deeper in colour than the well-known *N. Fothergillii*, of which it is evidently a derivative.

Messrs. W. WELLS & CO., Merstham, Surrey, displayed a very large number of single Chrysanthemums.

AWARDS.

FIRST-CLASS CERTIFICATES.

Polystichum aculeatum pulcherrimum Drueryi.—A handsome, finely-dissected variety of the native Prickly Shield Fern was shown by Mr. C. T. DRUERY, V.M.H., under this name. The fronds had more the appearance of those of *P. angulare subtripinnatum*, so finely were they divided, and with graceful curving rachis. The

pinnae were interrupted to the third and fourth degree, and some, at the extremity of the fronds, showed a tendency to tasselling, and then they overlapped slightly. The variety is one of the most beautiful and graceful of Ferns.

Salix.—Messrs. DOBBIE & CO., Rothesay, exhibited a very fine group of these showy and useful annuals. The colours of the flowers included white, rose-pink, lilac, blue, maroon-crimson, and other shades. A First-Class Certificate was awarded to the strain which displayed the highest excellence in the form and colour of the flowers and in their cultivation.

AWARDS OF MERIT.

Ampelopsis Lowii.—A dainty and self-clinging climber with very small leaves. The somewhat cordate leaves are deeply cut or lobed and vary greatly in these respects, the segments acutely pointed. The plant assumes a dark purple hue at this season, and will be likely to meet with appreciation. The variety is said to have originated from seed, and will most likely prove to be a variety of *Vitis inconstans*, a species of which the popular "Veitchii" is also a variety. From Messrs. HUGH LOW & CO., Enfield.

Aster Nora Peters.—A graceful variety of perennial Aster, with nearly pure-white ray florets and flower-heads $1\frac{1}{2}$ inches across. The florets are exceedingly numerous and almost thread-like in character. From Mr. W. PETERS, Givons Park Gardens, Leatherhead.

Cotoneaster applanata.—A pretty and graceful species, with a tendency to a drooping habit of growth. The exhibited specimen was about 5 feet in height, with leading central stem, the branches gracefully arching outwards and downwards. The leaves are small in size, ovate in form, entire, and alternately disposed on the branches, the scarlet fruits appearing in clusters on stems of about one inch in length. From Messrs. JAS VEITCH & SONS.

Phlox Georg. St. Elmo.—A very handsome and effective variety, best described as an improved *Etia*. The individual blossoms are of large size, good form, and of a rosy-salmon colour, with scarlet shading. From Messrs. GUNN & SONS, Olton, Birmingham.

Litsea hendes.—A distinct species from China, said to have pinnate leaves composed of fine ovate-oblong leaflets, the central one being of large size and unusually prominent. In the plant shown the leaves were generally tri-lobed. All the leaflets are serrate, with an acuminate apex, and are of a glossy green above and violet shade beneath. The plant is glabrous in all its parts (see description and figures in R.H.S. Journal, 1904, vol. xviii.). From Messrs. JAMES VEITCH & SONS.

JOINT AWARDS OF THE ROYAL HORTICULTURAL AND NATIONAL DAHLIA SOCIETIES.

The Dahlias were inspected by a joint committee of the National Dahlia Society and a deputation from the Royal Horticultural Society's Floral Committee. The varieties described below have therefore the awards of both societies.

Dahlia Saturn.—White, with rosy-scarlet colour in small streaks. The florets are well incurved and very finely pointed.

D. Dorothy.—The most refined of the pink-flowered Dahlias we have yet seen.

D. Clara.—This variety has rosy-peach-coloured flowers, in which the florets are strongly incurved.

D. Etruria.—A showy variety of a deep-red-dish orange shade.

D. Harold Peerman.—This flower is of pure yellow, and has excellent form.

D. Helium.—A pale orange-red-coloured flower with yellowish centre, the finely-pointed florets being well incurved.

The six Cactus flowered Dahlias described above were exhibited by Messrs. JAMES STREDWICK & SON, St. Leonards-on-Sea.

D. C. H. Curtis.—This flower is of a glowing crimson scarlet, the white-tipped florets forming a complete arch over the centre of the flower; very handsome and distinct. From Mr. H. SHOESMITH, Westfield, Woking.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, de B. Crawshay, H. Little, W. Boxall, R. G. Thwaites, F. Sander, J. Wilson Potter, T. W. Bond, A. A. McBean, Arthur Dye, W. Cobb, J. Charlesworth, W. P. Bound, W. H. Young, H. G. Alexander, H. A. Tracy, W. H. White, F. J. Hanbury, and W. Bolton.

JEREMIAH COLMAN, Esq., Gatton Park, Reigate (gr. Mr. W. P. Bound), was awarded a Silver Flora Medal for a small group of bright appearance, composed principally of hybrids raised at Gatton Park. *Cattleya amabilis* var. *illustre* (labiata \times Warscewiczii) is a pleasing novelty, in which the features of both parents are blended, the showy purple-crimson lip deriving much from the influence of *C. Warscewiczii*. Varieties of *Lælio-Cattleya* Nysa, L.-C. Phryne, and other *Lælio-Cattleyas*; the handsome *Cattleya Adula* Colmanæ, C. Mrs. Pitt, and other hybrid *Cattleyas* were also contained in the group, which included a plant of *Cirrhopetalum appendiculatum* var. *Fascinator*, with a handsome flower, the sepals and petals having a deeper purple fringe and the sepals a darker claret-coloured tint than those in the original form.

Major G. L. HOLFORD, Westonbirt, Tetbury (gr. Mr. H. G. Alexander), showed *Brasso-Lælio-Cattleya Rowena* rubella, a variety that differs from the exhibitor's original yellow form in having the sepals and petals slightly veined with pale rose, and the front of the fringed lip of a clear, reddish mauve colour. Besides this plant was noticed *Lælio-Cattleya Lustre* (C. Luddemanniana \times L.-C. callistoglossa), a flower of the best type, with broad, lavender-tinted sepals and petals, and violet-purple lip with a yellow patch on either side of the tube; and *Cypripedium Dante* (Charlesworthii \times Euryades), the fine white dorsal sepals of which have broad, spotted lines of purplish-rose colour.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. Davis), showed a fine form of *Cattleya Prince Edward* (Warscewiczii \times Schilleriana), with seven flowers on a spike; *Cymbidium erythrostylum*, and the singular *Catasetum laminatum*. (See Awards.)

MESSRS. CHARLESWORTH & CO., Heaton, Bradford, were awarded a Silver Flora Medal for a group of rare hybrids and varieties. Among *Odontoglossums* were *O. crispum* Queen Maude, a very distinct form of the *O. c. Lady Jane* class; handsome forms of the "Heaton" strain of *O. Rolfeæ*; several good plants of *O. amabile*, and one with a specially fine dark-coloured flower; many well-flowered examples of *O. grande*, &c. Among the *Brassavola-Digbyana* hybrids we noticed the clear, white *Brasso-Cattleya* "Queen Alexandra," varieties of *Cattleya Iris*, C. Mrs. J. W. Whiteley, C. John Baguley, and C. Chamberlainiana; the curious *Schombocattleya spiralis*, the rich, coppery-red and purple-coloured *Sophro-Lælia Gratrixæ*, and other hybrids. The species included the large and singular *Bulbophyllum grandiflorum*, B. Godseffianum, *Burlingtonia fragrans*, and a finely-flowered batch of *Vanda Kimballiana*.

H. S. GOODSON, Esq., Fairlawn, West Hill, Putney (gr. Mr. G. E. Day), received a Silver Flora Medal for a bright and varied group of Orchids, which included the white *Brasso-Cattleya Queen Alexandra*, B.-C. Grogani, and other *Brasso-Cattleyas*; a very handsome form of *Cattleya Chamberlainiana*, *Cattleya Goossensiana*, other hybrid *Cattleyas* and *Lælio-Cattleyas*, and a large number of choice *Cypripediums*, the best of which was a magnificent form of *C. Chapmanii superbum*, with a very large and finely-formed flower, densely spotted with purple. Other notable *Cypripediums* were a bright rose-tinted variety of *C. Wm. Lloyd*; the handsome *C. H. S. Goodson* (Swinburni \times T. B. Haywood), with large flowers of best shape and attractive colouring; several forms of *C. Io*, of which *C. Io grande* was the best; *C. Rothschildianum* hybrids, &c.

MESSRS. JAS. CYPHER & SONS, Cheltenham, were awarded a Silver Flora Medal for a remarkable group, the body of which was composed of more than 100 good specimens of the pretty little *Cypripedium Fairrieum* which, until recently, has been so rare. Although the flowers varied in shape and colour, few phenomenal varieties have been bloomed. Messrs.

CYPHER have this plant in many thousands, and have hopes of flowering an albino form before all are proved. At one end of the exhibit was a batch of good forms of *Dendrobium Phalaenopsis Schroderianum*, and at the other the fine *Cypripedium Læanum Corona*, C. Milo, Westonbirt variety, C. insigne The Queen, a beautiful form of *Cattleya Wendlandiana*, C. Mantinii nobilior, *Lælio-Cattleya Clive*, with silvery-white sepals and petals and a richly-coloured lip, *Oncidium Papilio*, &c.

MESSRS. HUGH LOW & CO., Enfield, secured a Silver Flora Medal for a group in which was a good specimen of the pure white *Cattleya Gaskelliana alba* with four flowers. Varieties of *Cattleya Iris*; *Lælio-Cattleya elegans* and other *Cattleyas* and *Lælias*; a well-developed specimen of *Stanhopea oculata*; *Cypripedium Charlesworthii rubrum*, one of the largest and finest in colour yet shown; *Houlletia Brocklehurstiana*, *Stelis muscifera*, *Warscewiczella velata*, W. Wailesiana; *Oncidium microchilum*, the yellow form of *O. oblongatum*, and some good *Dendrobium Phalaenopsis Schroderianum*, &c., formed the principal features in this group.

MESSRS. ARMSTRONG & BROWN, Tunbridge Wells, were awarded a Silver Flora Medal for a group containing many plants of their noted strain of *Cattleya Iris*, the plants being obtained by crossing *C. bicolor* and *C. Dowiana aurea* both ways. This is one of the brightest of *Cattleya* hybrids, and no fewer than nine distinct varieties have been given awards by this committee. *Cattleya Pankhurstiana* and *C. Armstrongiæ* are two pretty hybrids with rose-tinted flowers, the disc of the lip being coloured orange. Other hybrids were *C. fulvescens*, C. Lord Rothschild, *Lælio-Cattleya Geo. Woodhams* (C. Hardyana \times L. purpurata), with purplish-rose flowers, having a dark claret-coloured lip; *Cypripedium Maudiae*, C. Kimballianum, &c.

MESSRS. SANDER & SONS, St. Albans, staged a select group, including several very fine forms of *Cypripedium Fairrieum*; the handsome *Cymbidium erythrostylum*, *Cattleya Lord Rothschild*, the rare *Eulophia Guineensis purpurata*; *Lælio-Cattleya Endymion* var. *amabilis*; and L.-C. The Duchess. (See Awards.)

MESSRS. JAS. VEITCH & SONS, LTD., Chelsea, showed a beautiful variety of *Cattleya Davisii* (velutina \times Hardyana), with buff-coloured sepals and petals, and a yellow lip beautifully veined with rose-crimson and having an orange disc.

MESSRS. WILLIAM BULL & SONS, Chelsea, staged a selection of choice Orchids in the centre of their group of foliage plants.

C. J. LUCAS, Esq., Warnham Court (gr. Mr. Duncan), showed a plant of *Cattleya Iris*, "Warnham Court" variety, with five apricot-yellow flowers having purple lips.

G. W. JESSOP, Esq., Cliff Cottage, Rawdon, Leeds (gr. Mr. Wilkinson), sent *Bulbophyllum grandiflorum*, a finely-developed flower, veined with olive green on a whitish ground.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), sent *Lælio-Cattleya Lady Leese* (L.-C. callistoglossa \times L. xanthina), of which the sepals and petals are white, with a slight yellow shade, the disc of the lip is orange, with reddish lines at the base, and purple in front.

MONSIEUR MERTENS, Ghent, showed hybrid *Odontoglossums*, *Miltonia vexillaria Leopoldii*, M. Bleuana, &c.

Col. BRYMER, Ilington House, Dorchester (gr. Mr. Powell), showed three plants of *Lælio-Cattleya Powellii*, said to be derived from L.-C. Brymeriana \times L. xanthina. The sepals and petals are cream-white, front of lip purple.

AWARDS.

AWARDS OF MERIT.

Lælio-Cattleya The Duchess (C. Hardyana \times L.-C. Hippolata), from MESSRS. SANDER & SONS.—A grand hybrid that somewhat resembles a flower of L.-C. Cappei, but with much larger flowers than that form. The sepals and petals are coloured a light orange shade, and this is faintly tinged with rose; the elongated and finely-crimped lip is ruby-purple.

Odontoglossum Pescatorei ornatum, from MESSRS. J. & A. A. McBEAN, Cooksbridge.—A

large and handsome form of the species, the labellum bearing large, deep-purple blotches on the greater part of its surface.

BOTANICAL CERTIFICATE.

Catasetum laminatum, from J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis).—A very remarkable species, with greenish sepals and petals slightly marked with rose, lip long and narrow, and having in the middle a narrow, whitish keel or blade half an inch in height.

Fruit and Vegetable Committee.

MESSRS. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, showed 30 young trees of Apples lifted from their nursery, and placed in pots. They were perfect little specimens, some being bush and others cordon-trained. All were very heavily fruited, the most noticeable being King of the Pippins, Warner's King, Newton Wonder, Golden Spire, Cellini, Tyler's Kernel, Schoolmaster, Col. Vaughan, Stone's Apple, Cox's Pomona, Peasgood's Nonsuch, and Bismarck. (Silver-Gilt Knightian Medal.)

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton, W., displayed two varieties of autumn-fruiting Strawberries. The following particulars were appended to the variety labelled Merveille de France:—"The original plants were received as runners this season from France, and, after being grown for some time in pots, they were planted in the open in May." From these, runners were obtained, which were taken between July 8 and 13, grown on and placed under glass on September 10 to ripen their fruits, some of which were exhibited. The other variety had pale-coloured fruits, and was labelled La Perle.

From the society's gardens at Wisley was displayed an exhibit of two dozen varieties of Pears, of which the more notable were Triomphe de Vienne, Beurre de Mortillet, Madame Treyve, Marguerite Marillat, Doyenné Bussoc, Calebasse Grosse, Souvenir du Congrès, Gratioli de Jersey, and Louise Bonne of Jersey. (Silver Knightian Medal.)

THE LECTURE.

At the afternoon meeting of Fellows, Mr. B. H. Thwaite gave a lecture on "The Cultivation of Plants by Electricity." After a general introduction, the lecturer demonstrated by the aid of diagrams the cyclical character of natural processes. He explained that when the rays of the sun or of an arc lamp fall upon the green leaf of a plant it is electrically energised. The history of experiments in endeavouring to accelerate the growth of plants by means of electrical power was traced back to 1746-1749, when Maimberg and Abbé Nollet electrically stimulated plants. The lecturer next surveyed the work of the two schools of experimentalists—the one who employs the voltaic electric arc, the other the electro static system. He gave, inter alia, the results of Siemens's work in the former system and of Lemstrom's work in the latter method.

Certain results of Newman's experiments were detailed; this investigator obtained an increase in the productions of Strawberries equal to 36 per cent., in Cucumbers 13 per cent., and in Beetroot 33 per cent.

The lecturer gave details of a system he has invented for electric cultivation, and he demonstrated, by the help of lantern slides, the remarkable acceleration of the growth of plants at the Royal Botanic Society's installation at Regent's Park, due to electric stimuli.

TRIAL OF DAHLIAS AT WISLEY.

A TRIAL of comparatively new varieties of Cactus Dahlias has been undertaken at Wisley this year, in the interests both of the Royal Horticultural Society and of the National Dahlia Society. Varieties put into commerce during the previous three years were admissible only, and the principal object of the trial was to determine the merits as decorative garden plants. A joint committee, consisting of members of the R.H.S. Floral Committee and of the N.D.S. Committee, visited the gardens on September 12 last. Most of the plants were at that date too backward for their merits to be adjudicated upon. A

second meeting was therefore held on September 26, and even then very few plants were at their best period of flowering, although many presented prospects of blooming freely in October. The following varieties secured three marks:—Lustre, rich scarlet, good erect stems, and flower of true Cactus form; Meteor, terra cotta; A. D. Stoop, crimson-scarlet, with magenta tips to the florets; Primrose, soft sulphur-white; and Mrs. J. G. Brunton, straw-yellow. A large number of older varieties were also grown close by, but none showed great decorative quality. Even the best selected varieties of the newer set showed little diversity in habit from that commonly seen in the Cactus section, and little prospect seems to be offered of the section ever producing characters that can in any way vie in garden effect with some of the old Decorative section, or the better types of the pretty Pompons. No doubt, for garden decoration, where the quality of the flowers, from the florist's point of view, is of no moment, by far the best effects are obtained from the new large or Pæony-flowered forms, of which several varieties are being grown at Wisley. It is hoped next year that not only will the varieties of the large Pæony-flowered section be largely increased, but that the number of plants of each variety will also be enlarged. They possess long, stiff stems, and, for floral decoration in vases, are very attractive. In the garden the clumps of three or four plants have a remarkably pleasing effect. Amongst those so excellent at Wisley were Nicholas, pure white—the plant is of a medium height; King Leopold, pale yellow; Paul Kruger, white ground, heavily flushed with rosy-red; Queen Emma, apricot; Duke Henry, rich crimson; and Dr. van Gorken, soft peach. Whilst the lateness of the summer checked Dahlia growth to some extent, another reason for the lateness of the plants flowering at Wisley is to be accounted for by the delay in sending the plants for trial in spring.

BIRMINGHAM AND MIDLAND COUNTIES GARDENERS'.

SEPTEMBER 25 & 26.—An exhibition of early-flowering Chrysanthemums and Dahlias was held at the Botanical Gardens, Edgbaston, under the auspices of the above association on these dates. The show was a great success, and the entries in all classes were more numerous than in former years.

Honorary exhibits were exceptionally fine. Messrs. SIMPSON & SONS, The Nurseries, Chad Valley, Edgbaston, exhibited early-flowering Chrysanthemums in variety. Messrs. GUNN & SONS, The Nurseries, Olton, put up a fine exhibit of hardy flowers, including Delphinium chinensis, Asters, Montbretias, and a collection of herbaceous Phlox. Mr. S. MORTIMER, Rowledge, Farnham, displayed Show and Cactus-flowered Dahlias. Mr. C. H. HERBERT exhibited hardy flowers. Mr. E. BURDEN, The Nurseries, Billesby Lane, showed a collection of well-coloured Apples.

Chrysanthemums.—The 1st prize for a group of Chrysanthemums cut from the open and arranged for effect was won by Mr. C. H. HERBERT, who had a very tastefully-arranged group; 2nd, Mr. A. F. PHILLIPSON.

The best six vases of a yellow variety of Chrysanthemum were exhibited by Mr. A. F. PHILLIPSON; 2nd, Mr. C. WALL.

Mr. HERBERT showed the premier six vases of a crimson Chrysanthemum, and Mr. C. WALL the best six vases of a white Chrysanthemum.

Dahlias.—In the class for a collection of Cactus or decorative varieties of Dahlias arranged in vases for effect, the 1st prize was awarded to Messrs. PEMBERTON & SON; 2nd, Mr. C. H. HERBERT. Messrs. PEMBERTON & SON also won in the class for six varieties of show or fancy Dahlias. The best six vases of Pompon Dahlias, six blooms in each vase, were displayed by Mr. C. HERBERT.

Classes were provided for members of the association only. One was for a group of Chrysanthemums arranged for effect, and in this Mr. C. BATCHELOR was successful; 2nd, Mr. T. SEANEY. The best vases of a yellow Chrysanthemum were put up by Mr. W. T. COLLISON; the best vases of a crimson variety and the best vases of a white variety by Mr. R. USHER.

NATIONAL CHRYSANTHEMUM.

OCTOBER 2 AND 3.—The early autumn exhibition of this society was held on Wednesday and Thursday last at the Crystal Palace, Sydenham. The show compared favourably with those of former years, and must be pronounced a success. The entries totalled 120; very many of these were in the decorative classes, decorated dinner tables being especially numerous. None of the exhibits was displayed on show-boards, and the general effect was enhanced by their elimination.

Two new varieties of the decorative type received the society's Certificate of Merit.

GROUP OF CHRYSANTHEMUMS.

The 1st class on the schedule was for a group of Chrysanthemums, arranged with suitable foliage plants on the floor, and occupying an area measuring 14 feet by 7 feet. There were three competitors, the 1st prize group being exhibited by Messrs. J. PEED & SON, Roupell Park Nurseries, West Norwood. This firm showed the finest flowers, the back of their group having large blooms of Japanese varieties, and sloping to the foreground were small plants, well-flowered, of the border type. Amongst the big disbudded plants were good examples of Mrs. R. Hooper Pearson, Mrs. R. F. Felton, Lady Henderson, Miss Phyllis Fothergill, Miss Mona Davis, Beatrice May (a fine white variety), and Miss Kathleen Paget. A few Palms, Codiaums (Crotons), Dracænas, and Ferns were used as foils. 2nd, Lady TATE, Park Hill, Streatham Common (gr. Mr. Howe), who staged large Japanese varieties only.

OPEN CLASSES.

CUT BLOOMS.

Japanese Chrysanthemums.—The class for the largest number of Japanese blooms was that for 24 flowers of eight varieties. Four exhibitors contested, the most successful being A. TATE, Esq., Downside, Leatherhead (gr. Mr. W. Mease), who was awarded the 1st prize for the varieties A. R. Wakefield (rosy-mauve), Mrs. W. Knox (a fine vase of this excellent yellow variety), Sappho (pink), Mrs. A. R. Knight (an intense shade of yellow), Mrs. R. Hooper Pearson (soft canary yellow), J. H. Silsbury, President Viger, and Algernon Davis. 2nd, G. H. DAVIES, Esq., Woodside, Maidenhead (gr. Mr. E. A. Pocock). W. Duckham, Mrs. W. Knox, and Miss W. H. Lee were the best examples shown by Mr. DAVIES. 3rd, Mr. NORMAN DAVIS, Framfield, Sussex, who had some excellent flowers, notably those of Mrs. R. Hooper Pearson, a yellow-coloured seedling, and Mrs. J. Hygate, the last-named being a white variety of great substance of petal.

Twelve blooms of Japanese varieties.—The best exhibit among three was displayed by Mrs. JEREMIAH COLMAN, Riddings Court, Caterham Valley (gr. Mr. Geo. Halsey), the varieties being Marquis Venosta, Mrs. W. Knox, Mrs. A. R. Knight, and J. H. S. Silsbury. 2nd, A. TATE, Esq., Downside, Leatherhead (gr. Mr. W. Mease).

Six blooms of Japanese varieties.—Four displays were staged in this class, the premier one by Mr. C. B. GABRIEL, Eardale, Horsell, Surrey. 2nd, Mrs. FORD, Parkside, Ravenscourt Park, S.W. Mr. GABRIEL had much the best blooms, including excellent examples of the varieties Mrs. W. Knox and Mrs. F. W. Vallis. *Two vases of twelve blooms.*—Although only two displays were staged, this was a very pleasing class, and the premier flowers were of high merit. Suitable decorative foliage was allowed for embellishment, and the winner of the 1st prize was Mr. G. HALSEY, Riddings Court Gardens, who utilised long, narrow Codiaum leaves, with sprays of Asparagus Sprengeri and Fern fronds.

EARLY-FLOWERING POMPON CHRYSANTHEMUMS.

The most important class in this section was one for 12 bunches in not fewer than eight varieties. Chrysanthemum foliage was allowed, but the size of each bunch was restricted to a diameter of 12 inches. The response was poor, for only two exhibitors contested, much the better flowers being shown by Mr. ERIC SUCH, Maidenhead. 2nd, Mr. J. SMELLIE, Pansy Gardens, Busby, near Glasgow. Mr. SUCH's flowers were Flora, Mr. Selby, Blushing Bride, Bronze Bride, M. E. Lefort, Alice Butcher, &c.

BORDER CHRYSANTHEMUMS.

Twelve bunches of distinct varieties not disbudded.—This proved a well-contested class, Chief honours went to two Busby growers, who showed much the better flowers, and in tall, bold bunches. The winner of the 1st prize was Mr. G. BOWNESS, Riverside Nursery, Busby, near Glasgow, and he was very closely followed by Mr. J. SMELLIE, of the same town. Mr. BOWNESS had such well-known varieties as Nina Blick, James Bateman, Goacher's Crimson, Dolly Prince, Hector, Roi des Blanchés, The Champion (yellow), Lillie (pink), Improved Mdle. Marie Massee, Polly (bronze), and Champs d'Or. Mr. SMELLIE showed similar varieties to the foregoing. 3rd, Mr. J. EMBERTON, Grove Road Nursery, Walthamstow.

In the similar class for disbudded blooms, the flowers were of much finer quality, as was to be expected, and the 1st prize exhibit, shown by Messrs. W. WELLS & Co., Merstham, Surrey, was excellent in every respect. This firm displayed Nina Blick, Goacher's Crimson (very fine), Roi des Blanchés, Miss B. Miller (yellow), Perle Chatillonnaise (blush pink), La Cygne (a beautiful, new, white variety), Queen of the Earlies, Polly (very handsome bronze shading with a paler reverse), Carrie, &c. 2nd, Mr. E. F. SUCH, Maidenhead, with Mrs. E. J. Castle (yellow, with a bronze centre), Ernest Baltet (dull red), Queen of Earlies, Perle Chatillonnaise (very fine), Rev. E. Wright, &c.

Some choice exhibits were seen in the class for six bunches of early-flowering Japanese or decorative varieties grown in the open, and not disbudded. Mr. J. EMBERTON, Walthamstow, won the 1st prize with excellent bunches of Perle Chatillonnaise, the petals being pure white, Nina Blick, Mrs. W. Sydenham (crimson), Le Vestal (white), Carrie (yellow), and Hector (pink). 2nd, Mr. SMELLIE.

AMATEUR CLASSES.

The exhibits generally in the amateurs' section were inferior in quality to those in the open classes, and in many instances the competition was not good. Only one exhibit was seen in the class for six bunches of early-flowering Japanese varieties, disbudded, and this was awarded the 1st prize. The exhibitor was Mr. W. H. CLARK, 244, High Street, Putney, his varieties being Murillo (pink), Miss B. Miller (yellow), Mme. Desgrange (white), Le Pactole (pale bronze), Nellie Black (red), and Burrell (pale yellow).

Mr. D. B. CRANE, 4, Woodview Terrace, Archway Road, Highgate, London, N., won in the class for 12 bunches of Japanese varieties grown in the open, disbudded, and in the similar class for Pompon varieties, the competition being poor in both cases.

The best three vases of Japanese Chrysanthemums of a yellow colour were shown by Mr. C. B. GABRIEL, Horsell, Surrey, in the variety Mrs. W. Knox. Three excellent blooms of Mrs. A. F. Miller secured the 1st prize for the same exhibitor for a white variety, and he also won in the class for three Japanese blooms of any colour other than white or yellow with Lady Henderson.

Miss C. B. COLE, The Vineyard, Feltham; Mrs. BRAWSTER, Canterbury; Mrs. A. ROBINSON, Park Hill, Carshalton, and Mr. D. B. CRANE were prominent winners in the decorative classes.

FIRST-CLASS CERTIFICATE.

Le Cygne.—An early-flowering, decorative variety having pure-white florets of much substance. The blooms are developed on long, stiff stalks which render the flower valuable for market purposes. When grown disbudded it resembles a small Japanese variety. Shown by Messrs. W. WELLS & Co.

Minnie Carpenter.—A free-flowering border or decorative variety, of a shade between bronze and red, and will be classed as a dark "bronze." The sprays were shown without disbudding, and numerous flowers were developed on the shoots. The largest flowers measured about 4 inches across their widest part. Shown by Mr. H. J. JONES.

NON-COMPETITIVE EXHIBITS.

Mr. H. J. JONES, Hither Green, Lewisham, staged a group of Chrysanthemums in which were exceptionally fine blooms of Moneymaker (white), Mrs. H. T. Miller (white), and Mrs. W. Deadle (red). Decorative Chrysanthemums and

perennial Asters completed an attractive exhibit. (Silver-Gilt Medal.) Mr. ERIC SUCH, Maidenhead, exhibited Chrysanthemums in a pleasing manner with vases of Asters interspersed. (Silver-Gilt Medal.) Messrs. W. WELLS & Co., Merstham, Surrey, staged a beautiful exhibit of Chrysanthemums, having banks of large flowering varieties upon a ground-work of smaller kinds. (Gold Medal.) Messrs. R. H. BATH, LTD., Wisbech, filled two tables with Chrysanthemums, principally of the border type. (Silver Medal.) Exhibits of Dahlias were shown by Messrs. H. CANNELL & SONS, Swanley, Kent. (Large Silver Medal.) HOBBIES, LTD., Dereham, Norfolk, also showed Roses in variety (Gold Medal), as did Messrs. T. S. WARE, LTD., Feltham. (Gold Medal.) Messrs. H. SPOONER & SONS, Hounslow, exhibited a large collection of hardy fruits. (Silver-Gilt Medal.) Messrs. JOHN PEED & SONS, West Norwood, showed flowers of tuberous-rooting Begonias. (Silver Medal.) Mr. F. BRAZIER, Caterham, showed seasonable, hardy flowers. (Large Silver Medal.)

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending October 2.

More warm nights than in any week for over 10 months.—Both the days and nights have continued warm during the past week. On the warmest day the temperature in the thermometer screen rose to 76°, which is a very high reading for so late in September. For three consecutive nights the exposed thermometer never fell lower than 51°, the average for the end of September being about 39°. The ground still continues warm for the time of year, and is now 2° warmer at 2 feet deep and 3° warmer at 1 foot deep than is seasonable. Very slight rain fell on three days, and on the first day of October there occurred a fall approaching a quarter of an inch, which, although only sufficient to moisten the surface of the soil, is the heaviest recorded here for four weeks. This rain was not sufficient to affect even the bare soil percolation gauge, which has been quite dry for 10 days. The sun shone on an average for three hours a day, or for an hour a day short of a seasonable duration of bright sunshine at this season. Light airs and calms have again alone prevailed during the week. The mean amount of moisture in the air at 3 p.m. was 3 per cent. less than a seasonable quantity for that hour. A selected plant of the wild Ivy came first into flower on September 24, or eight days earlier than its average date of first flowering in the previous 16 years, and six days earlier than last year.

SEPTEMBER.

An exceedingly dry, calm and sunny month.—The days were nearly all warm, whereas the nights, except in the last week, were mostly as unseasonably cold. On the warmest day (the 25th), the temperature in the thermometer screen rose to 78°—a reading which has only once before been exceeded so late in the month. On the contrary, on the coldest night the exposed thermometer registered 6° of frost—or greater cold than has been experienced here during any September for 18 years. Rain fell on but eight days, to the aggregate depth of only three-quarters of an inch, which is less than a third of the average rainfall for the month. Between the 7th and 24th, or for 18 days, no rain at all fell. The sun shone on an average for nearly six hours a day, or for an hour a day longer than is usual in September. In the last 21 years there have been only three Septembers as sunny as the month just closed. This was also a remarkably calm month, in fact, the calmest September I have yet recorded here, and in no hour did the mean velocity of the wind exceed 10 miles. The average amount of moisture in the air at 3 o'clock in the afternoon fell short of a seasonable quantity for that hour by 5 per cent.

THE SUMMER RAINFALL.

During the summer half of the present drainage year ending September, 12½ inches of rain fell, which is nearly 1 inch short of the mean rainfall for the same six months in the last 51 years. Taking the fall on each square yard of surface in my garden the total deficiency amounted to 4½ gallons. April and May were wet months, but since then the fall of rain in each month has been, more or less, deficient. F. M., *Winkfield, October 2, 1907.*

TRADE NOTICE.

CROMPTON & F. A. FAWKES, LTD.

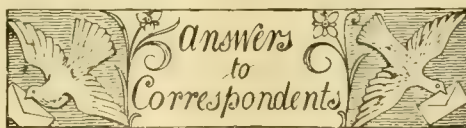
This newly formed company has a capital of £5,000, in £1 shares. Its objects are to take over the business of horticultural builders and repairers, mechanical engineers, joinery and moulding manufacturers, &c., carried on by CROMPTON & FAWKES, and by F. A. FAWKES, at Chelmsford. There is no initial public issue. The registered office is at Anchor Works, Chelmsford.

Obituary.

THOMAS SIMCOE.—We regret to hear of the death of Mr. Thomas Simcoe, at one time gardener to the late George Neville Dyatt, Esq., at Lake House, Cheltenham, at the age of 61 years. Deceased had occasionally contributed articles to these pages.

ENQUIRY.

CYCLAMEN HEDERÆFOLIUM.—Whilst renovating an old rockery I recently found a corm of this species which measured 20 inches in circumference. Do the corms of this species often attain to this size? H. E., *Cardiff.*



ANGULOIA CLOWESII: *Anxious.* The treatment you describe seems to be correct. Place the plant on a shelf near to the glass of the roof in a well-ventilated situation.

BOOKS: J. C. G. *British Fresh Water Algae*, by Dr. M. C. Cooke (expensive), with coloured plates, two vols. *The British Fresh Water Algae*, by G. S. West, 10s. 6d.

BRITISH GARDENERS' ASSOCIATION: E. S. W. The secretary is Mr. J. Weathers, Talbot Villa, Talbot Road, Isleworth.

CELERY DYING: J. K. There is no fungus disease present in your plants; the damage is caused by millipedes (Julus) eating the roots. Sprinkle the soil with nitrate of soda, and then afford a copious watering. A mixture of lime and soot should be applied to the soil after the crop is removed.

CHRYSANTHEMUMS FOR MARKET: B. L. Varieties are now very numerous, and they vary considerably in cultivation by different growers. It is, therefore, difficult to make a selection, but the following are among those which are most popular in the market. Early flowering—*White*: Madame Desgranges, Market White, Lady Fitzwigram, and Countess. *Bronze*: Nina Blick, Mrs. A. Beech, Polly, and Harvest Home. *Yellow*: G. Wermig, Miss B. Miller, Horace Martin, and Carrie. Mid-season—*White*: Money-maker, Ivory, Miss Alice Byron, and Mrs. A. T. Miller. *Bronze*: Soleil d'Octobre, Le Factole, Kathleen Thompson, and Source d'Or. *Yellow*: Soleil d'Octobre, Mrs. F. Greenfield, New Phœbus, and Old Gold. Late varieties—*White*: Madame Theresa Panckouke, Niveum, Mrs. Thompson, and Western King. *Yellow*: Negoya, H. W. Reiman, Golden Age, and W. H. Lincoln. *Bronze*: Lord Brooke, Tuxedo, Bronze Fabre, and Gratiopolis. In regard to the flowering season all varieties are inclined to vary; for instance, that known as W. H. Lincoln may be seen quite early in the season, and yet is equally good when purchased at Christmas time.

GRAPE LADY DOWNES: W. & T. S. See reply to D. Y. R. in the last issue, p. 240.

GRAPES DECAYING: C. V. The berries are badly shanked, a condition caused by some check such as a cold atmosphere in the vinery, or an unsatisfactory rooting-medium. To cultivate Muscat of Alexandria Grapes successfully there must be no parsimony in regard to the fuel necessary for heating the vinery.

NAMES OF FRUITS: *Caen.* 1, Jersey Gratioli; 2, Beurré Capiaumont; 3, Duchesse d'Angoulême; 4, Louise Bonne of Jersey; 5, Marie Louise; 6, Marechal de la Cour.—*Welch.* Dean's Codlin.—*F. W. C.* 1, Duchess of Oldenburgh; 2, Yorkshire Beauty; 3, Emperor Alexander; 4, Brockworth Park; 5, Autumn Josephine; 6, Vicar of Winkfield.

NAMES OF PLANTS: *Myrtle.* 1, *Pyrus salicifolia*; 2, *Crataegus mollis*; 3, *Tilia platyphyllos asplenifolia*; 4, *Thuya orientalis*; 5, *Crataegus Crus-Galli prunifolia*; 6, *Thuya gigantea*.—*V. T.* 1, *Epidendrum aromaticum*; 2, *Brouzhtonia sanguinea*; 3, *Cœlogyne corrugata*; 4, *Epidendrum ochraceum*; 5, *E. ciliare*; 6, *Miltonia Russelliana*.—*W. J. F.* All varieties of *Gongora armeniaca*. It is a singular species, and one not difficult of cultivation.—*J. J.* *Lælia xanthina*.—*A. C.* *Finchley.* *Odontoglossum constrictum*.—*S. M. G.* *Polygonum cuspidatum*.—*G. P. C.* 1, *Lobelia cardinalis*; 2, *Gaura Lindheimeri*; 3, *Helenium autumnale var. cupreum*; 4, *Malva moschata*; 5, *Plumbago Larpentæ*; 6, *Achillea Ptarmica* "The Pearl".

PEARS: T. W. C. The variety Fondante de Cuere is in season about the third week in August. This Pear has no synonyms, so far as we can trace. It is to be found in most collections, and can be purchased from the nurserymen you mention, although it does not appear in their catalogues. The variety Broompark ripens in January and is an excellent dessert Pear. This also is known by no other name. You should experience no trouble in obtaining trees from the nurserymen.—G. T. Your fruits reached us in a bruised and decayed condition due to want of care in packing them. If you will send us fruits packed in suitable material, and just before they are quite ripe, we will endeavour to name them.

PRONOUNCING DICTIONARY: G. W. F. If you have a copy of Nicholson's *Dictionary of Gardening* you will find that there is a pronouncing dictionary included in the supplement to that work. There is no book which deals exclusively with this subject.

SAPLING OAK: F. P. There are several varieties of hardy Oaks with leaves variegated with white, but none with leaves that are wholly white. The foliage of the specimen you describe is certainly very deficient in chlorophyll, i.e., green colouring matter, and those that will be produced next season may not be quite similar. During the winter the plant should be placed under a hand-glass, air being admitted by raising the moveable top; the latter may be taken off entirely during mild weather. The plant should be transferred to the open ground in spring.

SCHEDULE FOR EXHIBITION: J. E. H. B. The Royal Horticultural Society's *Rules for Judging and Suggestions to Schedule-makers* will supply you with the information. The work can be obtained from the Secretary, Royal Horticultural Hall, Vincent Square, Westminster, price 1s. 1d. free by post. Any first-class printer will supply you with cards suitable for use as certificates of merit.

SEEDLING APPLE: G. H. Judging from the somewhat acid fruit sent us we do not think your variety is equal in quality to many of the culinary Apples which ripen at the end of September. At this season there is no lack of good codlin and other sorts fit for use. There is a greater need for Apples that will ripen earlier, or that are capable of keeping sound longer, than most of those already in cultivation.

SILVER OR SPINACH BEET: G. H. In preparing this vegetable for the table, the thin parts of the leaves must be removed from the main rib, as the amount of cooking required by the ribs would reduce the vegetable to a tasteless mess. The thin parts of the leaves should be cleaned in several waters, and left immersed in water for an hour previous to being boiled alone like Spinach, and be served up like that vegetable. The mid-ribs should be likewise cleaned from dirt, and if more than a foot in length they should be sized, cut in halves, and tied in small bundles of 12 to 18 pieces each, and be boiled, as also the thin parts, in soft water, or if the latter be hard, it should have a small pinch of carbonate of soda added before the bundles are placed in it. As in the case of other green vegetables, the water should be slightly salted, and when they sink in the water they are sufficiently done if the water has been kept constantly boiling. The ribs must be tested with a fork, and the thin tops will be found to need rather less boiling than the butts. These may be served on toast with butter sauce. Except in hard weather Spinach-Beet may be gathered out of doors, a few leaves being taken off each plant. If the plants are taken up and planted in cold pits or protected cold frames, and induced to make growth, leaves are available all the winter. October is a good time to take up the plants, which should be done carefully with a digging fork, reserving as many of the roots as possible; afterwards affording them an abundant application of water so as to settle the soil about them and prevent flagging of the leaves.

COMMUNICATIONS RECEIVED.—A. U.—J. H. J. M. P. I. U.—A. B. G.—H. W.—S. E.—J. P. R.—E. C. D.—A. R. H.—C. K.—W. D. & S. K.—B. E. L.—L. G. Brussels.—M. C. C.—C. F. C.—D. G.—G. R.—J. M.—A. A. B.—R. & Co.—M. C.—H. B.—A. M. N.—J. S. C.—H. H.—B. L.—P. M.—R. V. & Son—J. R. L. S. C. C. T.—H. J. C.—W. E. W.—T. H. H.—C. T. D.—T. S.—C. P. R.—W. A. C. H. S.—J. D. G.—W.—Geo. S.—W. H. C.—R. S.—L. L., Brussels—H. C., Geneva—T. H.—J. R. J., Exmouth.



THE

Gardeners' Chronicle

No. 1,085.—SATURDAY, October 12, 1907.

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NOTES FROM A FRUIT PLANTATION.

THE picking of the great Plum crop is now finished, and there is time for giving attention to other departments of the fruit industry. A great deal of nonsense has appeared in the daily papers about the glut of Plums and the prices realised for the fruit. In consequence of the slowness of the ripening season, until nearly the end of it the picking was spread over an unusually long time, and on this account the glut of Plums was prevented from assuming disastrous dimensions. Reports from Evesham state that all the crop, not excepting that of the common Egg Plums, was gathered and sold, although part of it, and particularly Egg Plums, sold at very low prices. As usual, London was about the worst market in England, and, no doubt, Saturday's clearing prices were occasionally as low as those stated in some sensational reports. But no regular quotation was lower than 6d. per half-sieve, and only a very small proportion of the fruit—chiefly consisting of Egg Plums—was disposed of at such an unsatisfactory price. I tried London on two occasions, and they were enough for me, the return for

the second lot being only 1s. per half-sieve of 28lb., with commission and all other marketing expenses to be afterwards deducted. I began to market Rivers' Early Prolific when the fruits were half-coloured at 2s. 6d. per sieve, and they realised 3s. 6d. when they were fully coloured, and finally 2s. The variety Czar started at 2s. 3d. and 2s. 6d. for parts of the same consignment, but nearly all made the latter price afterwards. Victorias began when half-coloured at 1s. 9d., went up to 2s. 3d. for one lot, but they were mostly sold at 1s. 6d., excepting a consignment sent to London which was disposed of at 1s. The crop of this variety, although much the heaviest, brought in less money per acre than any other sort, excepting Gisborne, the latter fetching only 1s. to 1s. 6d. per half-sieve. Monarchs made 2s. 3d. to 3s., and Pond's Seedling mostly 3s., while Damsons brought in only 1s. 6d. These are low prices it is true, and where heavy rail charges have to be deducted the profit left after paying these and the commission, and after deducting the cost of picking, packing, and carting to the station, is extremely small. Still, considering the enormous bulk of the crop, the returns are better than might have been expected.

Apples are making moderate prices, considering how poor the quality is as a rule; but the rates are low in relation to the deficiency of the crop. Probably this is a season in which it will pay to hold back Apples that will keep well, if any are capable of doing so. This proviso is necessary on account of doubts as to the keeping qualities of the fruit, which seems this year to rot more quickly than usual. Apples that will keep are likely to make high prices, as not only is the home crop a very small one, but the American crop is also below the average. The Report of the American Department of Agriculture indicates the Apple crop as being only about half that of last season.

In an article published in these columns on July 27 reference was made to the tremendous and persistent attack of the aphid as being mainly responsible for the deficient size of Apples generally and for the large proportion of dwarfed and unsaleable fruit.

Among the numerous fungal attacks of the season, Plum leaf rust (*Puccinia pruni*) is strikingly noticeable now. The under sides of nearly all the leaves of my varieties of Plums and Damsons are covered with tiny black or dark-brown spots, and many trees have lost almost all their foliage. Some Damson trees were leafless before the fruit was picked, and the fruit on them was very small.

Cob Nuts are selling very badly this season. Last year I made 5d. per pound of quite green nuts, while the recent rates have been only 3d. to 3½d. per pound. The crop was a good one, except where it was exposed to the cold winds which so seriously damaged the Apple blossom. Evidently Cobs like a sheltered situation.

A recent operation has been that of cutting the bindings of budded stocks of Apples, Pears, and Plums. Contrary to the experience of last season, when the weather was too hot and dry during the budding period, the success has proved highly satisfactory. As the grafting done last March and April was even more successful, the nursery plot is

one of the most satisfactory parts of the farm.

In Mr. F. V. Theobald's valuable *Report on Economic Zoology for 1906-7* (Hendley Brothers, Ashford; 2s. 6d.), recently received, there is a good deal about the woolly aphid, or "American blight," as it is often called. The author writes of the attack of this pest upon the roots of Apple trees. No doubt, this form of attack is very serious where it occurs, but, although I have had, and still have, an immense amount of trouble with the pest in my nursery plot, extremely little root attack has been found. In taking up trees sufficient to stock nine acres in the last two autumns, I did not find more than a score instances of root attack. These, unless good trees, were burnt; but good ones had their roots immersed in a strong solution of soft soap or paraffin emulsion, and this treatment probably completely annihilated the pest, which, fortunately, is not known to produce eggs below ground. At any rate, in going over about 2,500 young trees planted in the autumns of 1905 and 1906, although woolly aphid was found close to the ground in a few instances, the scraping away of the earth failed to disclose any attack below the ground level. Moreover, fewer than a score of the trees were found attacked in any part, in spite of the fact that the pest had been prevalent among them before they were transplanted. This fact indicates that woolly aphid may be eradicated by persistent efforts to destroy it, and nurserymen should be ashamed of sending out infected trees or stocks. My farm was entirely free from the pest until I imported it on some crab stocks from a large nursery. It is necessary to go over the attacked trees or stocks at least once a week, applying an insecticide to the several colonies of the aphid with a small brush, and twice a week is better. I have found undiluted methylated spirit by far the best insecticide for this purpose, because of its remarkable penetrative capacity. On the other hand, soft soap solution with or without quassi, or paraffin emulsion, will run off a woolly colony instead of into it unless well brushed in, but methylated spirit saturates it in a moment, and kills the aphid instantly. Dilution impairs the penetrative quality of the spirit. It is somewhat expensive to use, but one application of it, in my opinion, is better than two or three applications of any other insecticide that I have tried. If only it were cheap enough to use as a spray for the leaf-curling aphid on Apples and Plums, it would probably be found effective where every other insecticide fails, because of its great penetrative capacity. But even if it would kill the aphid when diluted with four times its volume of water, it would still be far too expensive to use on a large scale.

The past season has been a splendid one for promoting the growth of young Apple trees, those planted nearly two years ago and those put in last autumn alike. Both have done far better than the former did in 1906, when the summer was too dry.

Among the trees planted last autumn, one row was left not cut back, while all the rest were cut back shortly before the buds began to burst, in the following March. Already I am pretty well satisfied that this small trial will be the last I shall need to make, as the

trees not cut back appear to be forming fruit-buds right up their long and thinly-disposed young branches, and I am not sure that I shall find a wood bud on some of the branches to which to prune. The trees that were cut back, on the contrary, have branched out well, and their buds are mainly wood buds, as it is desirable that they should be until the young trees are well furnished with branches. *Working Grower.*

HIPPEASTRUMS IN AMERICA.

(Concluded from page 242.)

HIPPEASTRUM VITTATUM can only be grown here successfully by giving it a considerable amount of attention. This is due, perhaps, to its deciduous nature and its peculiar root system. The sandy nature of the soil appears not to be to its taste, or the humidity of the climate may be against it. All the *H. vittatum* hybrids are poor growers here, and cannot be recommended.

H. RUTILUM, VAR. *EQUESTRIFORME*, grows as well here as *H. equestre*, provided it is planted in very rich moist soil in a half-shady place. In soil very rich in humus it multiplies rapidly by stolons which appear all around the bulb.

H. RUTILUM, VAR. *CROCATUM* (which seems to be identical with *Amaryllis croceum grandiflorum*) is also a stoloniferous kind, bearing light, saffron-coloured flowers. In many gardens it is common, but it is not very showy. It requires rich soil and a shady place.

H. SOLANDRIFLORUM, VAR. *CONSPICUUM*.—The well-known plant collector, Carlos Werckle (after whom Hildalgoa Wercklei was named), sent me, some years ago, a number of bulbs from Costa Rica where this kind is a common garden plant. A German gardener, the late Mr. Pfan, if I am not mistaken, had introduced this *Amaryllis* in large numbers into cultivation in Europe. From these importations, which were received by Haage and Schmidt of Erfurt, the beautiful coloured plate in Regel's *Gartenflora* (Pl. 949) was drawn. I wrote Mr. Werckle asking him to keep his eyes on the *Hippeastrums* in Costa Rica. He reported that only *H. vittatum* was cultivated in the gardens of San José. He sent me, however, a few bulbs, and I saw at once when unpacking them that they were not those of *H. vittatum*, as the tunics were entirely blackish, whereas in *H. vittatum* they are of a very light colour. A few weeks later the bulbs were in bloom, and they proved to be identical with the variety figured in *Gartenflora*. Later on he sent me more bulbs. The plant grows exceedingly well here in Florida, is deciduous, and flowers late in April when most other *Hippeastrums* have finished, pushing up its blunt, glaucous leaves after the flowers are expanded. The flowering scape attains to a height of from 36 to 40 inches, and develops a magnificent umbel of from six to eight very long-tubed flowers which are white suffused with pink, and are heavily lined with deep crimson, and are strongly and deliciously fragrant. This *Amaryllis* is one of my favourites, and I have used it largely in cross-breeding. A cross from this and *Enchantress* resulted in a few rather short-tubed, widely-open flowers—much more beautiful in every respect than *Enchantress*. These were again crossed

with *Madonna* and *Holloway Belle*, and thus I obtained a race of light-coloured, short-tubed, broad-petalled and vigorous kinds, with a very strong perfume. Some of these flowers are 8 to 10 inches in diameter. Crosses between this variety and *Empress of India*, *Southey*, and other kinds with red flowers, were inferior to their parents, and experiments along this line were discontinued.

The true species *HIPPEASTRUM SOLANDRIFLORUM*, which I received from the late Dr. A. Ernst, of Caracas, is inferior to the variety, and, as it is a very tender plant and difficult to manage, I never used it in cross-breeding.

H. LEOPOLDII.—This I have employed several years in cross-breeding, but finally lost it and was unable to obtain it again. A new consignment of fresh bulbs from its habitat in the Peruvian Andes would be welcomed by all lovers of these beautiful plants. I have raised quite a number of hybrids from this plant, and also from other show varieties of *Amaryllis* on which I used its pollen.

H. PARDINUM seems to vary a good deal, not only in colour, but also in constitution. Some are very weak growers, while others are quite vigorous. My success in using its pollen in my experiments is scarcely worth mentioning. A fresh supply from its home in the Andes of Peru would be a boon to the hybridizer. We scarcely know anything from whence these two last-named gems among *Hippeastrums* came, where they grow, at what altitude, in shady or sunny places, in rich or poor soil, and when they flower.

HIPPEASTRUM AULICUM, VAR. *PLATYPETALUM*, and the still finer *H. AULICUM*, VAR. *ROBUSTUM* (or *TETTANI*) grow exceedingly well here in the open air in leaf-mould and sand. They are fair foliage plants and very ornamental, even without flowers. The blossoms appear here in November and December, frequently at a time when our first frosts occur. At such times leaves and flower stems are cut down, but the leaves soon begin to grow again. Though the flowers are very showy, they are not well formed—from a florist's point of view—and I never had an opportunity to use them in hybridizing, for the simple reason that at this time no other *Hippeastrums* are in flower.

The show *Hippeastrums*, particularly the fine, sturdy strain of Messrs. James Veitch & Sons, grow exceedingly well here in the open. They flower profusely, and grow luxuriantly year after year, but the grower has to keep a watchful eye on his pets all the time. During the middle of March the first broods of lubber grasshoppers (*Romalea* sp.) emerge from the ground in colonies of from 100 to 200, and, if not killed immediately, not a vestige of foliage, flower scapes, or flowers would remain. Later in the season the fully-grown grasshoppers will appear from the woodlands all around, and one specimen will eat several fully-grown leaves of an *Amaryllis* in a wonderfully short time. Fortunately, these clumsy insects appear usually singly or in pairs, and are easily killed. No bird, not even the chickens, eat them. Later in the season the *Amaryllis* caterpillar would destroy all the foliage of the *Hippeastrums*, *Hymenocallis*, and many *Crinum*s, if not picked off and destroyed. *H. Nehrling*, Florida.

NOTES FROM GLASNEVIN.

EUCRYPHIA PINNATIFOLIA.—This beautiful Chilean shrub is now in flower in these gardens, and although the plant is not a large specimen it is bearing numerous flowers. A half-shaded position and a soil containing much peat will be found to suit the requirements of this rather capricious subject.

CESTRUM TERMINALE (PARQUI).—This is another Chilean plant that is flowering freely in these gardens. The plant is trained against a wall, and has been in flower for several weeks past. The inflorescences consist of panicles of light yellow-coloured flowers.

GENISTA ÆTHNENSIS.—For several weeks past a group of this lovely Sicilian species has been much admired for its flowers. The habit is exceptionally graceful, and the plant is extremely floriferous. The branches are slender and somewhat pendulous, and the bushes attain to a height of 10 feet or more. The colour of the flower is a clear shade of yellow.

CLEMATIS INTERMEDIA.—This species is one of the most satisfactory for gardens of the *Clematis* grown at Glasnevin. The habit of growth is strong, and the branches produce an abundance of light blue-coloured, medium-sized flowers. *Clematis intermedia* forms a good subject for training on a pergola or trellis-work.

CLEMATIS HENDERSONII is a similar habited plant to the foregoing, but the flowers are of a darker colour. This species is also a desirable garden plant, and does not die off similar to grafted plants of showy flowering kinds.

PHORMIUM TENAX PURPUREUM.—A noble clump of this fine variety of New Zealand flax grows by the side of a stream which skirts the lower part of the arboretum in these gardens. At the present time it is throwing up numerous flower-spikes, many of which are already 10 to 12 feet in height. None of the flowers is expanded. This *Phormium* is suitable for planting by the water-side in gardens, the climate of which is sufficiently mild for it to withstand the winter.

NYMPHÆAS.—Perhaps the finest feature in Glasnevin at the present time is the collection of hardy *Nymphæas* in flower. The majority of the best sorts known to cultivation are grown in a shallow serpentine pond, that has a setting of green grass which slopes to the water's edge. The varieties include *N. Marliacea albida*, *N. M. carnea*, *N. Gladstoniana*, *N. atropurpurea*, *N. Ellisonii*, *N. Laydekeri purpurea*, *N. Robinsoniana*, *N. chromatella*, and the tiny *N. pygmæa helvolla*. *J. W. Besant, Glasnevin.*

THE ADVANTAGES OF AUTUMN-PLANTING.

IN more than one respect there is an advantage in autumn-planting over that done in the spring. The work is sometimes delayed until the latter period because the planter considers that the summer-growing season following immediately upon planting it must have a good effect. This is not always so, however, with many subjects, and particularly with fruit trees and bushes. The spring often sees warm showers and sunshine alternate with frost. Too frequently in April, and, indeed, in the beginning of May, frosty nights and cold blasts are experienced, and these prove detrimental to recently-planted trees, especially when the cold is followed almost immediately with a spell of dry, hot weather. The soil at that season just below the surface is still cold after the winter's low temperature, causing the roots to remain inactive. A few warm, sunny days, however, will be sufficient to excite both wood and flower buds into growth from nourishment stored up in the woods in the previous season. This reserve of food is very limited, and is quickly exhausted. If bulbous plants are placed direct into ground

heat and excessive moisture, the resultant leaf-growth soon exhausts the sap in the bulb; the latter then withers, and no bloom is forthcoming for the simple reason that root action was not encouraged previous to forcing.

The same conditions rule in transplanting trees and shrubs, and in every case one should first consider how to preserve the roots so that they receive very little or no check, and, secondly, how they may become established again in the new soil and situation in the least possible time. If this is accomplished successfully, there need be little fear as to the top growth doing well, since the foundation for the production of this has already been achieved. It is surprising how new roots will develop in a month or more in the case of a tree or shrub newly planted, say, early in November. When the planting has been properly carried out, and the roots embedded in fine friable soil, a mass of new white fibrous roots will be found permeating the fresh compost, and this notwithstanding top growth has been almost dormant since the planting. This I have proved to be so from practical observation, and especially in connection with fruit trees in pots. Some trees that were turned out of their pots early in autumn for re-potting were plunged in a light soil, to enable the pots to be prepared for their reception again. The work was interrupted, and the plants remained plunged for a longer period than was intended, and on moving them a mass of new roots was seen. This proves that the roots of fruit trees will remain active, providing the conditions are favourable, after the foliage has fallen. A point of importance to observe in planting trees is to afford the roots a fine compost, not necessarily of a rich description, but rather of a light, gritty and porous nature. Too frequently rough, lumpy soil is placed around the roots of newly-planted trees, and the cavities formed in the soil favours the admission of frost and drying winds, which injure the young root-fibres. A few spadefuls of a finely-divided compost should always be placed amongst the roots of newly-planted trees and shrubs. After the planting is finished, water should be afforded if the soil is dry: a top-dressing of half-decayed leaves is preferable to the use of rank manure.

Richard Parker.

EUCRYPHIA CORDIFOLIA CAVANILLES.

THE subject of our illustration at fig. 109 was received from Mr. W. E. Gumbleton, of Queenstown, Ireland. It forms a fine shrub with dark persistent foliage, and bears beautiful white blossoms. It is a native of Chili, and seems to have been first flowered in this country by Messrs. Jas. Veitch & Sons, at Coombe Wood, in 1897. A figure appeared in the *Gardeners' Chronicle* for October 9, 1897, which was drawn from a specimen supplied by Messrs. Veitch, and we understand that the plant which forms the subject of the present notice was also obtained from the Coombe Wood Nurseries. Its special interest lies in the way in which the leaves have come to differ from the typical form, as originally figured in our columns. Comparison with specimens at Kew and the Natural History Museum leaves, however, no doubt as to the identity of the plant with *E. cordifolia*, for although the leaves are commonly much blunter and more rounded at the apex, barbarian specimens show that the plant varies somewhat in this respect, and in Cavanilles' *Icones*, plate 372, the pointed leaves, so characteristic of the Irish plant, are clearly shown to occur along with others more oval in outline. The shrub is quite hardy in Mr. Gumbleton's garden, where it is growing near, but not trained on, a wall, and reaches a height of 10 feet.

HARDY PLANT BORDER.

PENTSTEMONS.

THE value of Pentstemons for summer and early autumn decoration in the garden has been especially seen this season. The range of colouring in the different varieties enables the planting of beds with almost any colour, or they may be blended to produce a good effect. A variety especially suitable for massing in beds or in borders is George Horne, with its stately spikes of brilliant crimson-coloured flowers, which are white in the throat, and its deep green foliage.

lights are removed and the plants are fully exposed. In the autumn the growths are cut down to within a few inches of the soil, a mulch is applied for protection, and in the following spring several shoots push from the base of each plant. Grown in this manner they give a fine crop of flowers.

Pentstemons are easy of propagation. Cuttings inserted in September or early in October in sandy soil in a cold frame that is kept close root readily, and the plants are ready for planting out the following April. Some cultivators of Pentstemons prefer raising their plants from



FIG. 109.—EUCRYPHIA CORDIFOLIA: FLOWERS WHITE.

If a pale pink variety is required, Lady Curzon, with pale pink edging on a white ground, may be selected. Rachael is still the nearest approach to a white variety in this flower.

One almost wishes Pentstemons were quite hardy, for if they could be retained in the border over the winter, they would produce a wealth of flowers early in the season. When growing new varieties on trial, I usually retain the most promising plants, and flower them in their second year. They are first planted out in a cold frame, but later in the season the

seeds each year out of considerations for space, but those propagated from cuttings of well-known and approved sorts are the most satisfactory.

The varieties of Pentstemons are very numerous, and amongst the best of the newer kinds with their colours are:—Hilda Stevenson, a variety having tall, strong flower-spikes, a deep shade of rose-pink in colour, but with a pure white throat. Mrs. D. McOmish, in colour bright scarlet, with crimson-chocolate striped throat, a very showy and strong growing

variety. Lady Morrison Bell, flowers of a bright crimson colour, with a cinnamon margined throat, and developed on tall spike. Jesse Forbes, white, with an edging of pale rose and a pure white throat. Charles Lunn, rosy crimson, throat heavily margined with chocolate. Mrs. Alexander Brown, rich crimson, white throat. Sir Dighton Probyn, intensely dark crimson, with puce-coloured stripes in the throat. Colonel Hope, white, margined with rosy-scarlet, a very choice variety. Alexander Brown, claret-coloured tube and white throat. Thomas W. Cuthbertson, rosy pink (the large open throat is margined with chocolate). William Bull, rosy scarlet, with chocolate throat. Mrs. Robertson, deep rose, fading to pale pink on the margin, bells closely set on a compact spike. John Michie, deep crimson, with a richly-striped crimson throat. Thomas Hay, the flowers are fully 2 inches in diameter, rosy scarlet in colour, with a deep crimson mottled throat. Mrs. Ovens, violet-purple, with a crimson-chocolate throat. Lady Clementine Waring, the "bells" of this variety measure 2 inches in length; they are of a deep rosy crimson colour, the throat is flushed with magenta. Mrs. Lucking, this variety has extra large flowers that are deep rose in colour, and with a clear white throat. John Lamont, the long, narrow tube is a clear shade of crimson, with an expanded white throat. This is an improvement upon the variety George Horne or Lord Lister. John Forbes, violet-purple, chocolate throat. Marconi, white in the throat, the "bells" spotted with crimson, and margined with rose. Lord Rothschild, rose-pink, the throat veined with crimson. Mrs. Joseph Chamberlain, rose-pink, with a pure white throat. Mrs. Wigan, cream, with a pink margin. All these varieties have been raised by Mr. John Forbes, Hawick.

Another person who has devoted much time to the improvement of these flowers is Mr. E. Beckett, Aldenham House Gardens, and his newer kinds are: Lord Kitchener, with flowers $2\frac{1}{2}$ inches in diameter, coloured rosy magenta, with a clear white throat. Wm. Fyfe, crimson-maroon, flushed with rose on the edge, and with a pure white throat; this variety produces the largest flower-spike of all, the "bells" are $2\frac{1}{2}$ inches in diameter. Fascination, this variety grows fully 4 feet high; it is purple-crimson in colour, with a few stripes and blotches of crimson in its white throat. Earl of Minto, dark crimson on outer surface, and with a crimson-striped, chocolate-coloured throat. Gertrude Saunders, soft rose, with a pure white throat; an effective variety for planting in a mass. Nulli Secundus, flowers a rich shade of scarlet; the habit of growth is free. Maxima, a variety having extra large, bright scarlet flowers; the plant is of strong growth. Red Splendour, bright red, with scarlet-striped throat; a vigorous growing variety. Aldenham Pride, large, rosy pink flowers, and throat blotched and striped with crimson. Rosalba, the outer surface of the flower is coloured rose, the inside, pale creamy white; the habit is compact, the growth free. Burston Beauty, dark red, with a deeply-striped throat. Painted Lady, flowers bright scarlet, with a heavily-striped throat; a variety of robust growth. Virgin Queen, creamy white, height, 4 feet. Henry Irving, rich red exterior, and throat heavily marked with chocolate; a vigorous growing variety. Cinderella, this variety is exceptionally free in flowering, the flowers are rosy violet in colour with a white throat. *E. Molynaux.*

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM BELLATULUM HYBRID.

A FLOWER of a hybrid *Cypripedium*, said to have been obtained by crossing *C. bellatulum* and *C. Beechense* (Curtisii \times superbiens) is sent us by Mr. W. Thorpe, gardener to J. W. Collett, Esq., Hillfield, Gloucester. As might be

expected, it closely resembles the lighter form of *C. Chapmanii* (bellatulum \times Curtisii), the variety magnificentum of which is illustrated in the *Gardeners' Chronicle*, June 5, 1897, p. 365. The flower sent, however, has narrower petals and with a whiter ground colour. The dorsal sepal is pale green, with a white margin and radiating purple lines from the base. The petals are white, with a greenish tinge at the base, the whole being spotted with dark purple; the staminode and face of the lip is dull, purplish-rose colour.

CIRRHOPE TALUM APPENDICULATUM VARIETY FASCINATOR.

A VERY attractive form of the type is now flowering in the collection of Jeremiah Colman, Esq., Gatton Park (gr. Mr. W. P. Bound). Compared with the original form for which Sir Trevor Lawrence, Bart., was awarded a Botanical Certificate at the Royal Horticultural Society's meeting on November 26, 1898, and which was illustrated in the *Gardeners' Chronicle*, December 10, 1898, p. 415, the variety Fascinator differs chiefly in the purple colour of the basal half of the lower sepals, which in Sir Trevor Lawrence's plant was spotted with purple on a cream-white ground. It bears solitary flowers about 8 inches in length, the lower sepals representing the greater part. The concave upper sepal is whitish, marked with purple, and bears at the apex a purple plume on a filiform base. The petals, which are similarly decorated with purple plumes, are white with purple lines, both sepals and petals having the outer halves fringed. The lip is purplish-crimson, and the closely-approached lower sepals whitish, the basal half purple on the face, and spotted with purple on the thin, tendril-like outer halves. The species is figured in King and Pantlin's *Orchids of the Sikkim Himalaya* as *Cirrhope talum ornatissimum*, but that species, which was illustrated in the *Gardeners' Chronicle*, November 4, 1898, has an umbel of flowers, and is very distinct from *C. appendiculatum*.

HERBACEOUS SPIRÆAS.

(Concluded from page 244.)

S. DECUMBENS (*S. procumbens*).—This is an Alpine species, and one that forms a thick carpet of lobed leafage from underground stolons. The flowers are pure white, 6 inches in height, and appear like minute blossoms of *S. filipendula*. *S. decumbens* delights to ramble among broken rocks in the freest possible manner in a rocky recess, or to form a low patch at the foot of a boulder. The root system is shallow, hence droughts affect the plant in poor soils.

S. DIGITATA.—There is a small *Spiræa* in cultivation which came to us, probably from Siberia by way of Japan, and has borne the name *S. lobata* for several years. The true *S. lobata* is the *S. venusta* of gardens, and there is no connection between the two plants. Lately it has been referred to as *S. digitata*, a plant known to me from published descriptions only, and the misnamed *S. lobata* is now regarded as a dwarf-habited form of *S. digitata*. It forms a close tuft of palmately-lobed leaves 6 inches high, and produces pretty red flattened cymes of rather large flowers on ruddy stems scarcely a foot high. Its rich green leafage and showy flowers are very attractive, and as the plant grows exceedingly well and flowers freely, it should become popular. It is rather rare, and its propagation is somewhat slow.

S. FILIPENDULA (Dropwort).—The double-flowered form of this British species is extensively grown in gardens. The leafage is elegantly pinnate, and the flowers in the type are creamy white, and developed in loose cymes. The size and colouring of the flowers vary in the wild forms, and I have collected two plants with very large flowers on the Mendip Hills. One of these was pure white, the other creamy tinted. I have the plants now, but have not

succeeded in inducing them to flower under cultivation. The double variety is a useful and attractive border plant, at its best during July, but when well cultivated one or two flower-heads are almost always present.

S. HACQUETH is a rare Tyrolean species of trailing habit, and is best described as a carpeting plant for the rock-garden. It forms a thin mat of hairy leafage that is studded at mid-summer with tiny white flowers developed on dainty flattened panicles.

S. LOBATA (*venusta*).—This species is the pink-flowered *Spiræa* that is so widely known as *S. venusta*. It is a beautiful species, with elegant leafage, the side lobes of which resemble an Elm leaf in shape, the terminal lobe that of the Sycamore. The leaf cluster exceeds 2 feet in length, the flowering stems 5 feet, and both leaf stalks are ruddy tinted. The flowers are produced in flattened cymes, the central cluster terminating the growth, whilst two lateral clusters rear themselves 6-12 inches above the central one, and there one or two smaller lateral clusters are developed from the uppermost leaves. This plant has somewhat the habit of our native Meadow-sweet, but the inflorescence is altogether finer and coloured a rich rose-carmine, "shot" with pink. The late Rev. Wolley Dod reared several seedling forms of this plant, and these are now becoming general in cultivation. Seedling variations embrace flowers of all shades of rose and carmine. The species is a native of North America. Few plants can surpass *S. lobata* in elegance of outline and beauty of flowers. The plant succeeds in any good soil.

S. PALMATA.—This Japanese plant is now common in gardens. The flowers are coloured a bright crimson and are arranged in flattened heads, which surmount the palmately-lobed and elegant foliage. The plant forms a grand subject for planting by the waterside, and it will thrive with its roots perpetually submerged. A well-tilled border is also a suitable place for its planting. There is a pretty white-flowered variety known as *alba*, having pale green foliage, and the contrast with the type plant is very pronounced. Other varieties exist, including *S. p. elegans*, a strong-growing form, and often exceeding 3 feet in height. The plume-like inflorescence is pale rose in colour. This variety should be planted in every garden. There is a form known as *purpurea*, with ruddy leaf colouring, and another named *maxima*. This last-named is undoubtedly of hybrid origin, and either *S. lobata* or *S. Ulmaria*, with *S. palmata*, are the parents. Its leaf system resembles that of typical *S. Ulmaria*, with the exception of the glaucous reverse. The inflorescence is that of a glorified *S. Ulmaria*, but of pale rosy colouring. As a border plant it is a grand subject, and quickly forms a huge clump with 10 to 20 flower-heads.

S. PECTINATA.—This procumbent-habited species is a native of the Rocky Mountains. The acutely-lobed leaves and interlacing stems form a mat-like growth that is sparsely covered with pretty heads of white flowers that are reared just above the foliage. *S. pectinata* is not a common plant in gardens.

S. ULMARIA (the Meadow Sweet).—A British species found in marshy sites everywhere. The double-flowered form is a splendid garden plant: a few clumps planted three years ago have now huge sheaves of snow-white flowers, and they are superlatively beautiful. The double-flowered form has not the attenuated habit of the wilding, but is vigorous—even robust—in comparison. Although quite common in some districts, it is not planted half so extensively as its merits deserve. It thrives well in any good soil, and is a most accommodating plant. There are two forms of the type with variegated leaves. One form has golden venation, the other is heavily variegated with yellow throughout. This latter is the common variegated form of gardens. *G. B. Mallett.*

BUSHEY HOUSE, BUSHEY, HERTS.

(See Supplementary Illustration and Fig. 110.)

BUSHEY House, the subject of the supplementary illustration, occupies an elevated position on the main road from London to Bushey, and is the residence of E. H. Cuthbertson, Esq. The mansion, which is built of white stone, is approached by a fine drive. The lawns and

them at the time of my visit were quite up to the best exhibition standard. They are planted 250 in a group of one colour, and the flowers are used for decoration in the residence. Other large beds in the front of the mansion are planted with Roses, which succeed everywhere at Bushey House Gardens. Near the house, on a broad terrace, are a number of flower-beds with statues and large vases. The arrangement is after the Italian style, and they appeared very

was growing a collection of half-hardy plants, including *Grevillea rosmarinifolia*, *Carpetaria californica*, Myrtles, Camellias, choice varieties of *Ceanothus*, *Cæsalpinia japonica*, *Buddleia variabilis* Veitchiana, and many others. These were in a good condition of growth, and made a pleasing covering for the wall. Around a stretch of ornamental water at the bottom of the lawn, near the terraces, were some fine specimens of *Acer Negundo variegata*; the pond



FIG. 110.—SCENE IN THE GARDENS AT BUSHEY HOUSE, HERTFORDSHIRE.

(See also Supplementary Illustration.)

grounds have been much enlarged and made more beautiful since this gentleman has been in residence, during the last seven years. The grounds are entered through ornamental iron gates, and near by are some beds and arches of Roses, planted in well-trenched ground that originally formed part of the park. These Rose trees are flourishing splendidly, and many of the blooms seen on

bright with their summer occupants. The conservatory was furnished with groups of decorative plants, including hanging baskets of Ferns and other suitable plants.

The terrace was adorned with two very fine specimens of the Pomegranate. From this spot a beautiful view is obtained of the lawns in the foreground and of the distant hills behind. At the foot of a lower wall of the terrace

itself was planted with choice varieties of Water Lilies.

Rambling Roses and cone-trained specimens of Pelargoniums, some 400 plants in a bed, appeared very effective near this water.

By the side of a path near this part of the grounds are some cleverly executed miniature rock-gardens. Small rustic bridges span other ornamental water hereabouts, and the

water sides are planted with choice aquatic and bog-loving plants. At a distance from the water, banks and borders are planted with a collection of choice shrubs, both deciduous and evergreen species. I noticed a fine plant of *Davidia involucrata*, and another of *Clematis montana rubens*. There were also seen *Astilbe Davidii* flourishing grandly by the side of the water; *Loropetalum chinense*, *Abelia floribunda*, *Cyrilla racemiflora*, *Enkianthus campanulatus*, *Cytisus sessiliflorus*, *Olearias* in variety, *Rhododendrons*, *Cistus ladaniferus*, *Andromedas* in variety, *Spiræas*, &c. The rockeries contain a choice collection of rock-garden plants, all of which grow freely, including many half-hardy species.

In a corner near by was massed a representative collection of succulent plants, some of which were handsome specimens.

In the glasshouses were seen good crops of Grapes, Peaches, Melons, and Figs, also plants for furnishing the conservatory. One greenhouse was entirely filled with plants of *Calanthe* and another with *Codiaeums* (*Crotons*). A batch of *Clerodendron fallax* was contained in another house; this plant is much prized at Bushey House for its beautiful flowers.

In the kitchen and fruit gardens were noticed many plants of *Chrysanthemums*. The gardens are maintained in a high state of efficiency, reflecting credit on the gardener, Mr. C. G. Blake, and denoting the interest taken in horticulture by Mr. and Mrs. Cuthbertson. *W. A. Cook, Leonardslee Gardens, Horsham.*

TREES AND SHRUBS.

PRUNUS JAPONICA AS A FRUITING SHRUB.

UNTIL recent years *Prunus japonica*, or *P. sinensis*, as it is sometimes known, was represented in English gardens by its white and rose-coloured double-flowered varieties only. Messrs. James Veitch & Sons, Chelsea, however, have introduced plants of the type from China, through the medium of their collector, Mr. E. H. Wilson, and these have proved to be very ornamental, fruiting shrubs. The double-flowered varieties of *Prunus japonica* form bushes from 2 to 5 feet in height, and about the same measurement in diameter, every young branch becoming thickly covered with the double blossoms, each three-quarters of an inch across. The type plant, having single flowers, as previously stated, is not well known in British gardens, and it is doubtful whether many plants have been distributed, for it cannot be regarded as a good ornamental flowering shrub. The flowers are borne profusely, but they are small in size and inconspicuous. Their colour varies from white to rose. As an ornamental fruiting bush, however, the type is seen to advantage. At the time of writing (mid-September) bushes at Kew are laden with the bright red, almost scarlet-coloured fruits, each a third of an inch in diameter, and with a stalk half an inch long. The fruits are round, with a furrow along one side, and have a short, sharp point at their apex. Although these fruits are usually produced singly, some are produced in pairs. The flesh is very sour, and resembles in eating that of the European species, *P. acida*. Should the plants prove to be fruitful in most seasons, they will be valuable for the effect they afford in autumn. The species may be of value to the fruit-grower for hybridising purposes. *W. D.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Laith, Bedford, Surrey.

Sophro-Cattleya, &c.—Where a collection of all the *Sophro-Cattleya* and *Sophro-Lælia* hybrids is grown they should form a very prominent feature in the Orchid houses. Many of these hybrids may now be obtained at quite moderate prices, owing to their free habit of growth rendering propagation easy. Anyone having a moderately warm intermediate house may be advised to include most or all of the following sorts in their collection: *Sophro-Cattleya*

eximea, *S.-C. Calypso*, *S.-C. Doris*, *S.-C. Cleopatra*, *S.-C. Nydia*, *S.-C. Chamberlainiana*, *S.-C. Saxa*, *S.-C. Leemanii*, *S.-C. Queen Empress*, *S.-C. George Hardy*, and *S.-C. Bate-manniana*. The *Sophro-Lælia*s consists of *S.-L. Heatonsensis*, *S.-L. Psyche*, *S.-L. Gratrixæ*, *S.-L. Marriottiana*, *S.-L. Læta* and its variety *Orpetiana*, also *S.-L. Veitchii* and its variety *Eros*. All of these are charming and useful plants, capable of producing brightly-coloured flowers which are especially suitable for wearing in the button-hole. The beautiful rich colours appear to good advantage when seen by artificial light. During the past summer these plants have been cultivated in a structure the atmosphere of which is just a trifle warmer than that of the *Odontoglossum* house, but now that the nights are becoming colder, they should be placed in the warmest and most sheltered part of the intermediate house or in the *Cattleya* house. *Sophro-Cattleya Chamberlainiana*, *Sophro-Lælia Veitchii*, *S.-L. V. Eros*, *S.-L. Marriottiana*, and others are now producing new growths, and when in this condition may safely be re-potted if this is considered to be necessary. The plants at Burford are grown in ordinary flower-pots with copper-wire suspenders attached, so that they may be suspended near to the roof glass. The pots should be quite half filled with drainage material, well-dried bracken rhizomes being preferable to crocks, as they are lighter in weight. The plants make roots freely when potted in the same kind of compost as was advised in my Calendar last week for the *Cattleyas*, &c. Whilst growth is being made, and the plants are rooting freely, a sufficient quantity of water should be applied to make the compost just moist, but no plant should be watered until the potting material has become quite dry. Later, when the resting period is commenced, very little water will be needed to keep the pseudo-bulbs in a fresh and plump condition.

Epiphronitis Veitchii.—Another hybrid closely allied to those already enumerated is the well-known *Epiphronitis Veitchii*. This plant is one of the easiest of Orchids to cultivate when its requirements are properly understood. During the month of May I placed several small plants together in a shallow, 6-inch, teak-wood basket, using as a compost well-drained fibrous peat and sphagnum-moss, mixed together in equal proportions. This compost was packed rather firmly around the base of the plants so as to keep them fixed in their places. The made-up specimen was suspended from the roof of the *Cattleya* house in the lightest position available, and several times each day during the summer it was sprayed overhead and around the sides of the basket, the spraying being quite sufficient to keep the compost and roots moist without affording any other water. The plant has greatly improved and growth is free and robust.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq., Norwood, Allea, Clackmannanshire.

The raspberry.—Remove as soon as detected any decayed berries in the bunches, which should be examined for this purpose once or twice each week. Test the borders for moisture, and if they are found to be dry give water sufficient only to keep the roots active until the leaves drop. Care must be taken not to saturate vine borders when the berries are ripe, or the latter will decay rapidly. Admit an abundance of air daily, and leave the top and the bottom ventilators open slightly at night-time, but in damp or foggy weather the bottom ventilator is best closed. To expel superfluous moisture in the house maintain a little heat in the hot-water pipes. Vines that are cleared of their bunches should be well syringed each morning, especially if red spider is present. This will assist in keeping the foliage healthy, which is essential to the proper maturation and ripening of the shoots and buds. Examine the inside borders and renew any that are exhausted. Those that were re-made two or three years ago will be filled with roots, and a 2-feet layer of new compost should be added to them. Good fibrous loam, with a 6-inch potful of coarse-grade vine manure to each barrow load of the chopped turf, will form a suitable compost for the replenishing of vine borders, and it will be better

if some lime rubbish and wood ashes are mixed with it, being guided in the amount of lime by the nature of the loam.

The Orchard house.—Pot-trees should, directly the fruit has been gathered, be plunged in wood ashes in a sheltered position out-of-doors. Trees that have fruited badly should be turned out of their pots and their roots examined. If necessary afford them larger pots, or they may be planted in a border that is sheltered from strong winds, and be lifted and potted again in the spring. The compost for orchard-house trees should consist of well-chopped, turfy loam. To every barrow load of the turf add a 6-inch potful of coarse-grade vine and manure. Be careful not to provide too large pots. Reduce the "ball" by picking out all loose soil from among the roots. Trees that are not well rooted should be placed again into pots of the same size as they formerly occupied. Pot firmly and leave a space of about 2 inches at the top of the pot, so that a slight top-dressing can be applied in the spring. After potting, plunge the pots in coal ashes to their rims and afford them a copious watering. If birds are troublesome, it is advisable to net the trees to protect the fruit buds.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq., Cobham Park, Surrey.

Cabbages.—These have started nicely into growth, and in the event of any gaps occurring, through attacks of grub, or from club-root or other causes, such gaps should be made good without delay. In removing a plant attacked by grub, make a search for the pests below the ground, following the stem of the plant. Loosen the surface soil by means of the Dutch hoe at frequent intervals both at this season and early in spring. Rough weather may be expected soon, therefore the drills should be filled in as the work of hoeing proceeds, for this will help to make the plants firm, which is a great consideration during the next month or two. If the old plants in last season's bed have been kept for supplying Sprouts, they will now be giving good returns. The plants should be thoroughly cleared from all their outer and decaying leaves, if it is intended to keep them through the winter, in order that they may yield a further supply of Sprouts during late winter and early in spring, when other green vegetables are so often scarce.

Potatoes.—The work of lifting the tubers should be pressed forward with all the speed possible, there being nothing to be gained by leaving them longer in the ground, and as wet weather may now be expected, the effects would be injurious.

Salads will require close attention from the present time throughout the winter. Salads should be grown extensively to allow for loss from damping. The varieties should be as numerous as possible, the object being to supply the house with as many changes as can be arranged. Continue to blanch Endive as it attains to its full growth, and in sufficient quantities to meet the requirements. A few roots of Chicory should be lifted, and after wrenching off the foliage put the roots into boxes containing damp leaf-soil. Place the boxes in the Mushroom house or other dark structure, where the Chicory plants will soon start into growth, but on no account subject them to an excessive degree of heat, as this would cause a weakly growth lacking in flavour. Lift and box-up a few roots of Chives, covering them from 2 to 3 inches deep with fine leaf-mould, and stand them in a mild, moist atmosphere. Moderate sowings of Mustard and Cress should be made frequently.

Rhubarb for forcing.—A few roots should now be lifted and placed in a cold, damp position, fully exposed to the weather, so that they may receive as decided a check as possible, previous to being introduced into heat after ten days or a fortnight. A further batch should be cut well round with a spade; this will stop root-action, and will prepare them for removal later, when they will be required to succeed the earlier plants. If the roots are subjected to this treatment they will often be found to give satisfactory results, whilst others that are lifted from the open ground and placed directly into a forcing temperature may fail.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq.,
Eastwell Park, Kent.

The propagating house.—As the autumn advances, many plants which have been grown principally for use in summer decoration, become of rough appearance and, if retained, would require much valuable space under glass. It is, therefore, a good practice to propagate some young plants for stock purposes and destroy the old specimens. Choice varieties of Coleus are still grown and admired in many places, but being of little use in large pots during winter, cuttings should now be inserted in pots of light sandy soil. Pots measuring 3 inches or 4 inches in diameter are large enough for this purpose. When the cuttings are rooted and fairly established, they should be placed on a shelf close to the glass in a warm house. In this situation, in small pots, they often develop a very beautiful colour, and may be used occasionally for imparting brightness in a decorative scheme, but they will not keep in good health if kept for a long period out of the warm atmosphere. Where Fuchsias are grown into large specimen plants, a start must be made early in autumn, but if this has not already been done, cuttings of selected varieties should be inserted without delay. When the cuttings have rooted well, they should be potted up singly into small pots, using a light sandy soil, such as one composed of leaf-soil two parts and turfy loam one part, with a moderate addition of sand. In propagating Fuchsias so late in the season and with this object in view (contrary to the method practised with established plants that have flowered and are now being partially dried off previous to being stored away), these young plants must be kept gently growing all winter in a genial atmosphere, but not in one that is kept moist and but little ventilated, or the cuttings will make weakly growth. If placed on a shelf close to the glass, in a house where the atmospheric temperature ranges from 55° to 60°, according to the character of the weather outside, the conditions will be suitable. Early in spring it will be found that these plants have made good growth, and should be re-potted as often as they require more rooting-space. They will quickly grow into fine plants, and must not be checked either by allowing them to remain in a pot-bound condition or by neglect in the matter of watering.

General work.—Continue to push on with the housing of tender plants. Chrysanthemums with forward buds should be removed under glass, but varieties grown for flowering late in winter should be kept out-of-doors as long as it is safe to keep them there. These late plants being very valuable, should be given much care, and if it is thought inadvisable to leave them in an exposed position in the open, a corner behind a wall may be available for the purpose. Rhododendrons, Azaleas, Camellias, Cytisus, Acacias, and many plants usually cultivated out-of-doors during the summer, must now be removed indoors, the fruit houses, of necessity, often being required for housing plants at this season. Advantage should be taken of a fine day to take down all the blinds that will not be required again this season, numbering them and storing them in a dry loft ready for use next spring. Where permanent shading has been employed, this should now be washed off thoroughly in order that the plants may be exposed to the full light.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow,
Cornwall.

Dahlias.—Before the effects of frost make it difficult to distinguish the different varieties from each other, they should be marked by tying small labels to the main stem just above the surface of the ground. It may not be necessary to lift them for a week or more yet, but when doing so choose a dry day, and stack the tubers upside down to allow them to dry for about ten days before storing them for the winter.

Cannas should also be examined, marking the best varieties for propagation from early in the spring in order that the poorer ones may be gradually discarded. Directly the leaves have been blackened by frost the foliage should be trimmed off to within 5 or 6 inches of the ground,

and the roots lifted and stored for the winter. It is not always necessary to partly dry them as is done with Dahlias, but if they are very wet it will be wise to allow some of the superfluous moisture to escape before storing them.

The flower beds.—Even though frosts have not yet made it necessary to remove the summer bedding, those beds which have ceased to be attractive should be cleared and planted with the spring-bedding subjects. Both the tuberous and the fibrous-rooted Begonias are still flowering freely, therefore these beds should be left untouched for the present. The amount and nature of the dressing required will depend on the condition of the soil and the class of plants to be grown in the various beds. As very little artificial watering was required during the past summer, many of the beds will not require so much manure as usual, but all of them should be deeply dug to ensure good drainage. Wall-flowers require rich soil, therefore the beds allotted to them should be manured liberally. If the soil is of a heavy nature it will be wise to modify it for such plants as Tulips by adding old soil from beneath the potting-shed table, mixing this with the top spit. If the beds are surrounded by grass, let the edges be clipped before commencing this work, and do not neglect to use plenty of planks and boards for wheeling and treading upon, that the grass may be preserved. The planting of the main stock of Dutch breeder Tulips may well be left until the end of the month. If this is done their shoots may not appear above ground before the spring, when there will no longer be danger of injury by hard frosts. Some desirable varieties, such as Bleu Celeste, Penelope, The Shah, &c., make splendid beds alone, but are difficult colours to harmonise with others. Where it is desired to carpet these beds with other plants, the utilising of such plants as *Veronica gentianoides* var. *pallida*, and *Saxifraga Wallacei* may be recommended. The *Veronica* makes a good display late in the spring. Parisian Yellow is a beautiful Tulip, but its leaves are narrow and the surfaces of the beds filled with it appear comparatively bare, making a carpet advisable. Here *Anemone chrysanthemiflora* or *A. fulgens* is very useful. *Phlox amena*, which bears lilac-coloured flowers about 6 inches high, and *Phlox Newry Seedling*, with rather paler flowers, also make good carpeting plants for Tulip beds.

THE HARDY FRUIT GARDEN.

By J. MANN, Gardener to Lord CLINTON, Bleton,
East Devon.

Apples. With the exception of a few very late varieties the majority of these fruits should now be gathered. Apples generally are below the average in size this season, and they are not plentiful. Extra care should therefore be taken in gathering and storing them. It is advisable to make a note of those varieties that crop regularly in a particular garden, as this should be a guide when planting fresh trees.

Figs.—Unless the weather is dry and bright during the period of ripening of these fruits the flavour is deficient, and if much rain is experienced many of the choicer fruits crack and decay. Any trees that have made an excessive number of new shoots should have their growths thinned. If growth has been too rampant the roots should be pruned before the leaves fall. A trench should be made to the drainage material 4 feet from the base of the stem, and the soil removed carefully with a fork to expose the roots. All strong-growing, fibreless roots should be severed. In returning the soil to the trench it should receive the addition of some fresh lime or old mortar rubble and be made firm with a rammer, a necessary procedure to obtain short-jointed wood.

General remarks.—The recent rains have been welcome in many parts of the country where water is scarce. Remove wood that has borne fruits on late varieties of the Peach in order to assist the proper ripening of the current season's shoots. The foliage of the Peach and Nectarine has been remarkably free from red spider this summer, and with much less syringing than is usual; do not apply any water to the leaves after this date. Nets that have been used for protecting fruits from birds should be thoroughly dried previous to storing them. Sort those that need repairing; new ones recently purchased should be sent to the maker to be re-tanned.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

New laws for Park-government.—The Public Health Acts Amendment Act, 1907, which comes into force on January 1 next, marks a very important development in park administration. The new Act, while safeguarding the freedom of the people, confers additional powers upon the local authority, whereby it becomes possible, by restricting the use of the parks, to make them of greater service and value to the public. In its provisions for the better government of public pleasure grounds, the new Act sanctions little that is not already carried out in many parks in this country, although the local authorities were not empowered by law to do so. The importance of the new Act lies, therefore, in the fact that many park undertakings which at present are carried on illegally will, under the new legislation, be perfectly in order. Hence, in this, as in many other Acts of Parliament, the law is merely being brought into line with present-day views, and does not inaugurate any very radical change.

Hire of tennis courts, &c.—For a number of years much revenue has been derived in parks from bowling greens, tennis courts, quoit grounds and the hiring of chairs. Money derived from such sources—excepting where authorised by a special local Act—is really obtained in an illegal manner. Any person would be quite justified in refusing payment even while taking full advantage of the conveniences provided. The new Act, where adopted, will legalise all such charges, and persons refusing to pay for the use of any park apparatus, &c., for which a recognised charge is made, would become amenable to the law.

Games.—Under the amended Act, ground may be set aside specially for cricket, football or other sports; hence, it becomes possible for park authorities to define the seasons when certain games shall begin and others end. Under existing conditions this is a matter which is sometimes surrounded with many difficulties that cause considerable trouble.

Skating.—Powers are granted to the local authority to close parks during frosty weather for the protection of ice when forming. Although a very drastic step to take, it must be admitted that this is the only effective method of guarding ice from damage until it reaches the bearing stage. It is almost impossible to prevent the public, when permitted near a sheet of ice, from throwing sticks and stones upon it during the time the ice is forming. In addition, a quarter of the whole surface of ice when in a bearing condition may be enclosed and a charge made for the use of it.

Bands.—In connection with the provision of bands, it may be noted that besides authorising the payment for music in the parks out of the rates—the total amount, however, must never exceed 1d. in the pound—it permits of a portion of land up to an acre in extent being enclosed around a bandstand and a charge made to the public for entry.

Entertainments.—Local authorities may, under the 1907 Public Health Acts Amendment Act, provide and maintain reading rooms, pavilions, or other buildings, and charge (with certain restrictions and limitations in the case of reading rooms) for admission thereto. Refreshment rooms may also be provided and maintained, and, if desirable, managed by the local authority itself. The right to provide entertainment and refreshment for the public, or any apparatus they may need for the playing of games, may be leased by the local authority to any person or persons they may deem fit, but not for a longer period than three years. This proviso, while tending no doubt to lower the financial value of such concessions, is a very wise one, in view of the fact that it is so easy for these things to become the monopoly of a private firm, which often looks for considerable compensation when required to give them up.

The majority of park officials will welcome the new Act as a decided step in the right direction. On the contrary, certain sections of ratepayers may view some of its provisions—especially those dealing with the payment of bands out of the rates—with mixed feelings, and may even be led, on this account, to oppose its adoption in many towns.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless in special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, OCTOBER 14—
United Ben. and Prov. Soc. Com. meet.
Nat. Chrys. Soc. Floral Com. meet.

TUESDAY, OCTOBER 15—
Roy. Hort. Soc. Coms. meet.

THURSDAY, OCTOBER 17—
Roy. Hort. Soc. Exh. of British-grown Fruit (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—49.7°.

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, October 9 (6 P.M.): Max. 58°; Min. 47°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, October 10 (10 A.M.): Bar. 29.6, Temp. 60°; Weather—Bright sunshine.

PROVINCES.—Wednesday, October 9 (6 P.M.): Max. 55°, Colchester; Min. 49°, Scotland N.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—
Sale of Dutch Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY TO FRIDAY—
Dutch Bulbs at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

MONDAY—
Sale of Nursery Stock, also Greenhouses, Piping, &c., at Bridge and Park Nurseries, Lea Bridge Road, Leyton, by Protheroe & Morris, at 11.

TUESDAY—
Sale of Stove and Greenhouse Plants, Orchids, Greenhouses, Piping, &c., at Cedars Gardens, Glenburnie Road, Upper Tooting, by Protheroe & Morris, at 12.

WEDNESDAY—
Palms, Bays, Azaleas, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 5.

WEDNESDAY AND THURSDAY—
Sale of Nursery Stock at The Nurseries, South Woodford, by order of Mr. John Fraser, by Protheroe & Morris, at 11.

THURSDAY AND FRIDAY—
Clearance Sale of the whole of the Stock; also 40 Greenhouses, Piping, Boilers, &c., at the Nurseries, Coburg Road, Upper Teddington, by Protheroe & Morris, at 11.

FRIDAY—
Orchids in large variety at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Fashions
in
Flower-
garden.

The season has now arrived when the glories of the summer flower gardens have departed, and the gardener is therefore contemplating the removal of the plants, in order that preparations may be made for replanting the beds with bulbs, and other species that will flower early in the spring. It is a time when one's thoughts naturally revert to midsummer; the effects produced by the system of planting adopted in the spring are considered in the light of the pleasure they afforded, and the value they possess as indicating what may best be done next season. No gardener can afford to dispense with these moments of reflection which occur from time to time during his year's work. They should be encouraged and turned to good account, for thus it is possible to benefit by previous experience. For ourselves, we have noticed a tendency to dulness in many of the gardens

visited during this and last year. We do not mean a dulness that could be attributed to the influence of sunless weather, but rather to the preference that has been given to the less showy plants when selecting the species for adorning the beds. The subject may be easily understood by those whose memories can recall the days when the system of carpet-bedding was so generally considered to be desirable that examples could be seen in every public park and most private gardens in this country; many of the other beds being filled with masses of scarlet Pelargoniums, yellow Calceolarias, blue Lobelia, or similar-habited plants, whose brilliant floral masses were totally unrelieved by even the merest foil. This was a period when masses of showy colours were almost worshipped, and the repetitions of the garish displays in garden after garden became as monotonous as they were uninteresting.

It was evident to the more observant that a revulsion would occur from such a system as was then so general, and very little if any surprise was occasioned when the carpet system proved to have lost the fascination which it formerly possessed.

The colour-masses were the next to fall into disfavour, and the Pelargoniums, Petunias, Ageratums, Calceolarias, and such-like plants were either greatly reduced in numbers or they were distributed in a different manner, being used in association with other species that served to prevent the beds exhibiting the flat, unbroken surface of colour previously encouraged. The change was all for the better. A method of mixed bedding obtained a place, and what is known as the "dot" system gradually became more or less common. Some of the earliest and best instances of this were to be seen in the London parks, as Battersea Park, Hampton Court gardens, the Zoological Society's gardens, and in Hyde and Regent's Parks. By planting the beds with a dwarf-growing species, and inserting a few "dot" plants in each bed, which would grow to a greater height, the beds were made doubly interesting, and twice as effective as formerly. When viewed from a moderate distance the standard plants, whether of Fuchsias or other free-flowering species, were those which yielded an effect, but as the visitor drew nearer the dwarfier plants came into view and the picture afforded another effect, probably of quite a different colour. We have seen combinations of this kind that were commendable in the highest degree, being effectively floriferous whether viewed from the path at some little distance from the bed, or after stepping across the sward and inspecting the plants from directly overhead. It has to be admitted, however, that the anxiety of gardeners to avoid the suspicion that they were still admirers of masses of colour has driven them to the opposite extreme, and the fashion has so far changed in this respect that there is good reason to complain that absence of colour is in danger of being regarded as a fetish, and that our English flower gardens will therefore become dull and uninspiring. In some of the London squares, as well as in certain beds in some of the parks, we have noticed this tendency with regret. The fault lies in the selection of the plants and in the abuse of the "dot" system. Plants are chosen which produce flowers but are not showy, and pillar,

standard, or dot plants are employed so abundantly in a bed as to produce an effect in which they themselves require relief. We fear there is lacking the appreciation there should be for the glorious effects of masses of colour to be seen in Nature, in a bank of Bluebells for instance, a meadow of Cowslips, or a heath-covered moor. It should be further remembered that the greater number of flower beds are formed out of the grass-covered lawn, and for this reason alone they should be made bright. Many of them are seen from a distance a dozen times for every occasion on which they are examined minutely, and their effect on the landscape should therefore be given full consideration. It is refreshing, nowadays, to see some of the old-fashioned flower-gardening in Scotland, at Dalkeith or Ardgowan for instance, where the profusion of flowers and displays of colour offer so great a contrast to some southern bedding schemes that are almost remarkable for their paucity of flowers. We do not want to go back to the methods that were justly discarded in the last century, but at the same time there can be no reasonable objection to the statement that a flower garden should, at least, be floral. If there is not a place for flowers in the flower garden itself, to what other situation shall they be banished? A flower garden which lacks "colour" is as a casket from which the jewel has been lost. An excellent illustration of good flower-gardening may be seen in Lady Wantage's garden at Lockinge Park, in Berkshire, of which some illustrations were published in our issue for February 3, 1906. The dwelling-house is surrounded with flowers, showy flowers, and we believe that their companionship is more delightful to their owner than any system that could be substituted for that at present employed.

We publish on another page a letter from an old and valued correspondent, who is familiar with the bedding systems that have been practised for fifty years past, not that we agree with all that he has written, but because his criticism may have a corrective influence, and help to prevent us from drifting into extremes that would be just as deserving of condemnation as the stereotyped and formal flower-gardening that we have so often criticised in the past.

In regard to what our correspondent writes in relation to carpet-bedding, it must be admitted that such beds have always appealed strongly to the popular taste, but this has been on account of the curiosity they have aroused, just as floral cushions, clocks, and other similarly stupid arrangements of cut flowers may be depended upon to excite more notice from the public than a tastefully-arranged bouquet. There are doubtless certain gardens, and certain positions in our public parks where beds so planted as to represent a carpet may not be greatly out of character with their surroundings, but the fewer the better.

Our correspondent pleads that there should be evidence of design in the planting of the beds, a perfectly reasonable pleading, but in the light in which the situation presents itself to us, it is brightness and elegance, especially brightness, that should be the more insisted upon.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will take place on Tuesday, October 15, in the Vincent Square hall. At the afternoon meeting a lecture on "British Floral Relationships with Foreign Countries" will be delivered by Rev. Prof. G. HENSLAW, V.M.H. At the Scientific Committee a discussion on the summer pruning of fruit trees has been arranged, and it is expected that Messrs. A. H. PEARSON, SPENCER PICKERING, and H. S. RIVERS will take part. Fellows who are not members of the Committee, but who are desirous of attending, should communicate their wishes either to the chairman or to the secretary of the Committee.

FLOWERS IN SEASON.—A flowering spray of *Feijoa Sellowiana* has been sent us from the gardens of the Earl of ANNESLEY, at Castlewellan, Co. Down. This South American shrub was illustrated in the *Gardeners' Chronicle*, December 24, 1898, p. 451, when the plant was recommended for the delicious fruits it bore. Mr. RYAN, the gardener at Castlewellan, informs us that the plant grows in an open border at Castlewellan, and that it has received no protection for the past five years. The specimens are about 6 feet in height and measure as much in diameter.

From Mr. M. CUTHBERTSON, Rothesay, N.B., we have received 70 varieties of early-flowering *Chrysanthemums*.

BOTANICAL MAGAZINE.—The issue for October contains illustrations and descriptions of the following plants:—

FERULA COMMUNIS, var. *BREVI-FOLIA*, tab. 3,157.—Dr. OTTO STAFF, who describes this species, states that particular interest attaches to it because the problem of the origin of the gum ammoniac (Fashook) of Morocco has been solved owing to its successful cultivation at Kew. This gum was originally referred to *Ferula orientalis* L., a plant confined to the Orient, and later on to *F. tingitana*, which is a native of Morocco. Sir JOSEPH HOOKER, and afterwards Sir WILLIAM THISELTON-DYER, enlisted the services of Mr. G. P. HUNOT, then British Vice-Consul at Saffi, amongst others, to procure authentic specimens of the plant yielding the Fashook gum, with the result that its source is now traced to *Ferula communis*. A full account of the history of the drug will be given shortly in the *Kew Bulletin*. *F. communis*, var. *brevifolia*, was introduced as a root-stock to Kew from Morocco by Vice-Consul HUNOT in 1886, and it flowered in December, 1892. It represents a form of *Ferula communis*, characterised by shorter ultimate leaf segments, which occurs along with the typical form almost throughout the area of the species, which extends from the Canaries and Portugal to Constantinople and Syria, excluding North-East Africa. The plant is a herb, sometimes 10 feet high, quite glabrous. The leaves are bright green, very large, and the umbels are compound in a thyse, 3 feet or more long; the flowers are yellow. At Kew the plant has been cultivated in a pot in a greenhouse.

ROSA SOULIEANA, tab. 8,158.—This species is described by Mr. W. BOTTING HEMSLEY as one of the most desirable of the single white Roses, both in flower and fruit. It was received from M. VILMORIN in 1899, and it may be seen to great advantage in the Rose valley near the pagoda. It differs from *R. moschata* in the smaller leaves, usually oval leaflets rounded at both ends, shortly stalked glands on the peduncles, and in the shorter tails of the sepals. *R. Soulieana* forms bushes at least 8 feet high and as much through, armed with curved prickles, or with straight ones in the barren branches. The leaves are pale green, usually with seven leaflets, and the stipules are adnate,

acute with marginal glands. The flowers are ivory-white, about 1½ inch across, very numerous, in compound, dense, terminal corymbs or sometimes solitary on short lateral branches. The fruits are described as orange-vermilion, and as represented in the figure they are exceedingly ornamental. Mr. BEAN describes this Chinese species as one of the most vigorous and gross-feeding of Roses.

IRIS VERNIA, tab. 8,159.—This is an old species, which was cultivated by PHILIP MILLER in 1739, but it has never been common in gardens. Its natural habitat is in the Eastern estates of North America, from Pennsylvania to Virginia, Kentucky, and Georgia. The specimen now figured was forwarded to Kew by Mr. LYNCH from the Cambridge Botanic Gardens; it has fibrous roots, linear leaves, and one-flowered scapes, the flowers being violet-coloured except for the orange-coloured claws. Mr. W. WATSON states that the species is grown in a pot in a cold frame. It rarely flowers if planted out of doors, in which respect it differs from other members of the *Pumila* section.

BULBOPHYLLUM DICHROMUM, tab. 8,160.—This is a species first described by Mr. R. A. ROLFE in the *Kew Bulletin*, 1907, p. 128. It was introduced by Messrs. SANDER & SONS, St. Albans, about two years ago, and flowered at the Royal Botanic Garden, Glasnevin, in February last. The species is described as a very attractive garden plant, owing to the dark purple lip forming a striking contrast to the bright yellow sepals and petals, while the inflorescence is very graceful.

PEONIA CAMBESSEDESII, tab. 8,161.—This species is a native of the Balearic Islands and Corsica, and was introduced to cultivation by Miss FRANCES GEOGHEGAN, Glasnevin, Dublin. Mr. J. HUTCHINSON states that *P. corallina*, Retz, its nearest ally, differs in having glaucous-green, never purple, leaves and hairy carpels. The flowers are deep rose-pink, solitary, erect, usually about 3½ inches in diameter. Mr. W. WATSON states that the species has the same claims as a garden plant as those possessed by *P. officinalis*, *P. peregrina*, *P. corallina*, and the other species of the herbaceous section requiring the same cultivation as those species.

F. LEDIEN.—This talented horticulturist, who until recently filled the post of curator of the Botanical Garden at Dresden, has been appointed curator of the Botanical Garden at Dahlem, succeeding the late Herr FERRING. He entered on his duties on October 1. MAX LÖBNER, hitherto head gardener at Wüdenswil (Switzerland), will succeed F. LEDIEN at Dresden Botanical Garden.

NATIONAL SWEET PEA SOCIETY.—We are informed that the next annual show of this society in London will be held on Friday, July 24, 1908, in the Royal Horticultural Hall, Westminster.

SURVEYORS' INSTITUTION.—The first ordinary general meeting of the session 1907-08 will be held on Monday, November 11, 1907, when the president, Mr. THOMAS TAYLOR WAINWRIGHT, will deliver an opening address. The chair will be taken at 8 o'clock.

THE FRUIT CROPS IN SOUTHERN RUSSIA.—The crops, according to advices to hand, are extraordinarily abundant in so far as concerns Grapes, Apples, Pears, Plums, and Nuts; while Peaches and Apricots have suffered greatly from the winter frosts. It is intended to send extensive and comprehensive consignments of fruits from the Crimea, in which the great fruit-producing orchards and vineyards are found, to the chief cities of the Empire, and above all to St. Petersburg. The Russian Government's assistance can be reckoned upon for a moderation of transit costs.

CHANGE OF DATE.—We are informed that the date of the Manchester Chrysanthemum Show has been changed to Wednesday, Thursday, and Friday, November 13th, 14th, and 15th. Some alterations have also been made in the schedule, several new classes having been added.

HALF-HOLIDAY FOR NURSERY EMPLOYEES.—The firm of Messrs. JAMES HILL & SON, Barrowfield Nurseries, Lower Edmonton, N., has conceded to their staff a holiday each Saturday from 1 o'clock. Messrs. HILL & SON are extensive cultivators of Ferns, especially for the London markets.

DISEASE IN THE SILVER FIR.—M. E. L. BOUVIER describes in the *Comptes Rendus* for September 23, a disease which is attacking the Silver Fir (*Abies pectinata*) in the forests of the Jura Mountains. He terms it the "Red disease," from the colour assumed by the leaves of the dying trees. It was first noticed last year as occurring sporadically in the forest, but during this season it has spread to an alarming extent, and is affecting both the young and old plants. It does not touch the Spruce Fir (*Picea excelsa*), even when the two species are growing together, and this sharp preference indicates the probability that the malady is parasitic in its origin. No insect or other animal was detected, and M. BOUVIER believes that it is of a fungal character. He found a new fungus, which has been named *Rhizosphæra abietis*, growing on the dead leaves that were lying on the ground, and of course it is possible that this may turn out to be the source of the mischief. But the matter has not been as yet sufficiently investigated to settle this point. It has been suggested that the death of the trees might be due to the dry summer of last year, but this seems to be clearly negatived by the fact that the trees in the lower lying and damper districts were as severely attacked as were those growing in unfavourable situations.

POTATOS FROM SEED.—Dr. T. H. WILSON, writing in the *Transactions of the Highland and Agricultural Society of Scotland*, describes the result of experiments of crossing Potatos. As might be expected from plants of mixed parentage, many varieties made their appearance, not only when different sorts were used as the parents, but also when a variety was "selfed." Many of the offsprings were, of course, worthless, but of those showing good qualities the following may be mentioned: Prior (New Zealand Red × Myatt's Kidney), which is asserted to possess tubers of good size, to be resistant to disease, and to crop well. It belongs to the class of second earlies, and is of a flat oval shape, white, with occasional tinges of rose-pink, and shallow-eyed. Another new variety, named Rector (Maincrop × New Zealand Red), is a red or russet, round Potato, a late cropper of medium size. It is stated to possess good constitution and high quality, and also to be a disease-resisting and a good cropping variety. Of course, it remains to be seen how far the characters will be so retained under cultivation, and whether they will be such as to enable the new varieties to compete with other sorts already grown.

ROME.—We learn from *Secolo* that the magnificent gardens of the Vatican, once the chief point of attraction for foreign visitors, are now in a miserable condition in consequence of the niggardliness of the management which withholds the necessary means to keep them in condition. Under LEO XIII. the gardens were most carefully tended, and considerable sums dispensed for their upkeep, whilst Pope PIUS X. has but little interest in them. The desire to limit expenses has led to considerable reduction in the annual outlay and in the number of the workmen.

THE DECORATION OF THE MUNICIPAL OFFICES IN PARIS.—The various municipal authorities in the capital make use of cut blooms of Roses for decorative purposes yearly to the value of 50,000 frs.

GARDENERS' CRICKET.—On Saturday, September 28, a team, composed of representatives of the firm of Messrs. JAMES VEITCH & SONS, Chelsea, and captained by Mr. J. GOULD VEITCH, visited the Dover House Grounds, Roehampton, on the invitation of Mr. J. F. McLEOD, to play a friendly match with the gardeners in the employ of Mr. J. PIERPONT MORGAN. The game ended in a decisive win for the Dover House men.

Publications Received.—*The Wild and Cultivated Cotton Plants of the World*, by Sir George Watt, C.I.E., LL.D. Longmans, Green & Co. A revision of the genus *Gossypium* framed primarily with the object of aiding planters and investigators who may contemplate the systematic improvement of the Cotton staple.—*Code of Rules for Judging, and Suggestions to Schedule-Makers, Judges and Exhibitors*. Third edition. Royal Horticultural Society.—*Report of the Annual Meeting of the American Association of Park Superintendents at Toronto, Ontario, Canada*, on August 15, 16 and 17, 1907.—*The British Bee-Keeper's Guide-Book*, by T. W. Cowan. Nineteenth edition. Published by the *British Bee Journal* Office, Henrietta Street, Covent Garden, W.C.

KEW NOTES.

GRAMMATOPHYLLUM SPECIOSUM.

A FINE, healthy specimen of this interesting plant is now in full flower at Kew in House No. 10, where it has been grown ever since its presentation to Kew by Messrs. Sander & Sons in May, 1893. The plant has developed three stout racemes, the tallest of which is 9 feet 6 inches in height, has 82 expanded flowers at the time of writing, and 40 unopened buds in various stages of development. The raceme will probably reach 11 feet in height when all the flowers have expanded. The other two racemes are each about 9 feet high, and have, together, 229 flowers and flower-buds. The lower flowers of each raceme are aborted, most of them being composed of four nearly equal segments in two rows, and arranged at right angles to each other, with a short column and no lip. The bottom flower of one inflorescence has six nearly equal segments arranged in two tiers, the lip in this case being elongated, and closely resembling, both in shape and in marking, the rest of the perianth segments.

These abnormal lower flowers appear to be constant in all the plants which have flowered in this country. This same plant made a poor attempt to flower in 1901, the flowers which then developed being also aborted. It was very late in autumn when this inflorescence made its appearance, and after expanding a few flowers, it damped off during foggy weather.

The largest flowers on the Kew plant are 6 inches in diameter, these being on the lower half of the inflorescence, where the flowers are very loosely arranged on the scape, the upper and later formed flowers gradually becoming smaller and more densely arranged on the scape as they approach the apex. The ground colour of the flowers is dull yellow, heavily spotted with reddish-brown; the sepals and petals are spreading, broadly oblong obtuse, undulate; the lip is small, being scarcely 1 inch long; three-lobed, orange streaked with red, the disk sulcate, with three raised plates, bristling with short hairs. The column is greenish-yellow spotted with reddish-brown.

The whole plant consists of 21 pseudo-bulbs or stems and 7 leads. Several of the tallest stems are 12 feet high, the result of about six years' growth, the young leads making from 2 to 3 feet of growth per annum, the average

diameter of the stems being 2 inches. The leaves are distichously arranged along the stems, linear in shape, 1½ to 2 feet long, and about 2 inches in diameter, and remain on the stem for about two years, gradually falling off as the stems elongate with each season's growth.

A curious point in connection with the flowering of this plant is that the inflorescences are produced in each case from the base of the stems, which were made in 1905, the growth of the inflorescences coinciding with that of the current season's young growths.

The plant is growing on a raft, on a mound of compost consisting chiefly of peat, moss, and sand. In previous years the practice has been to lower the base of the compost into the Lily tank to a depth of 4 or 5 inches during the summer months, and to raise the plant again for the winter. This spring the plant was kept out of the water altogether, and only given water when the compost showed signs of becoming dry. As tropical Water Lilies have been grown in this tank during the past two seasons, in place of the *Victoria Regia*, it has been possible to ventilate the house more freely than was formerly the case. Whether either of these slight modifications of treatment or the combination of both have had the desired effect, I am unable to say, but it is interesting to record the fact that formerly during the summer months, when the plant was kept very wet at the roots by partial submersion, aerial, spiny roots were produced in such numbers as to completely cover the surface of the compost. Very few, on the contrary, have been produced this season, those which have been formed arising very near the bottom, and consequently the wettest part of the ball. In this connection it was recorded in this journal for August 31st last, in the article accompanying the illustration of this Orchid growing at the Peradeniya Botanical Gardens where it is grown as an ordinary terrestrial plant, that these erect, aerial, spiny roots are not produced at all freely, and that the plant seems to have become so accustomed to the terrestrial mode of life that it has gradually lost the habit of producing the aerial roots which are invariably present when the plant is growing under the conditions of an epiphyte. This leads one to the conclusion that the conditions which are necessary to cause this plant to form these peculiar roots are directly opposed to those which are necessary to cause the plant to flower. This class of extra-terrestrial roots is met with in many tropical and temperate plants which thrive in swampy districts, a well-known instance being the deciduous Cypress (*Taxodium distichum*). This plant, when grown in a very boggy position—as the well-known example at Ston House—usually sends up aerial conical butts or woody roots, in order to obtain a supply of air at the roots; when grown in the ordinary conditions of the garden, these are never produced.

The late Mr. F. W. Burbidge, writing in regard to this Orchid in *Gardeners' Chronicle* for March 8, 1890, p. 288, states that of the three or four species known from the Malay Archipelago and Malacca, the most common was *G. speciosum*. In his book *Gardens of the Sun*, p. 55, occurs the following passage—made by Mr. Burbidge on the spot, where the fall of a giant forest tree revealed a specimen of this plant growing upon it—"Here, right in the collar of the tree, is a plant of the Giant Orchid, big enough to fill a Pickford's van, and just opening its golden, brown-spotted flowers on stout spikes 2 yards long."

Mr. C. Curtis, who lately retired from the management of Penang Botanical Gardens, and who is an authority on all Malay plants, writing in *Gardeners' Chronicle*, 1893, vol. xiv., p. 622, stated that this plant is rather widely distributed throughout Malay-ia, but, so far as his own observations went, it was nowhere abundant. The finest plants were generally found high up

in the forks of not very leafy trees, where they get abundance of sunshine. Mr. Curtis then described a plant in the Penang Botanical Gardens, which in 1893 produced 24 inflorescences and had over 1,000 fully-expanded flowers. It was grown on a mound 3 to 4 feet high, exposed to all the sun possible, and received a top-dressing of leafmould twice each year, this being the only attention it received.

Mr. H. J. Veitch, who visited the Penang Gardens in 1892, describing this plant in *Gardeners' Chronicle* (see Travellers' Notes, vol. xii., p. 644) states that the plant bore 30 inflorescences the previous season, and gave its dimensions as 42½ feet in circumference, with growths 6 to 7 feet long.

Grammatophyllum speciosum is recorded as having first flowered in 1851 in the nursery of Messrs. Loddiges, at Hackney, when only one flower opened, and that was a deformed one about 3 inches in diameter.

In October, 1859, a much finer specimen flowered in the garden of W. G. Farmer, Esq., of Nonsuch Park, Ewell, from whose plant was prepared a figure for the *Botanical Magazine* (tab. 5157). This plant produced two racemes, each bearing 40 to 50 flowers. Some time after another plant was flowered by Mr. Scott, gardener to Sir G. Staunton, Leigh Park. In 1897 a plant flowered in the collection of Sir Trevor Lawrence, and was shown before the R.H.S. A figure of one of the lower imperfect flowers appeared in the *Gardeners' Chronicle* for that year, p. 147, fig. 42. The Kew specimen having previously flowered in 1901, the present is the sixth recorded instance of this Orchid having flowered in this country. The plant is a native of Java, Lampong, Malacca, Singapore, and Cochin China. C. P. Raffill, Kew.

THE ROUT OF THE ENGLISH ROSE.

["At the Royal Horticultural Society's Autumn Show the principal prizes were taken by Roses grown in Aberdeen, Dundee and Belfast."]

Oh, weave a shroud, where none may see
Her sorry clay, than doornails deader,
Oh pile it thick with *Standard Tea*,
And cuttings of the *Crimson Bedder*;
My England, where the lanes resound
With noise of bees and bullocks chewing,
At Little Slowly-in-the-Pound
What were your Surrey gardens doing?

When sterner crowns were lightly shed,
When sport or science suffered losses,
"Our reputation lives," I said,
On *Damasks* and *Perpetual Mosses*;
But now the clods where shamrocks blow,
And thistles thrive on pawky humours,
Have been and whacked our bravest show
Of emblematic autumn bloomers!

Where is the *Pride of Waltham*? Where
The *Magna Carta* on the trellis?
What of the blooms that scent the air
In rural spots like Miss CORELLI's?
Are there no hands to train the shoot
Of *Bessie Brown*, no touch caressing
To twine about the *Moss-rose* root
Restoratives of guano dressing?

I see the *Dundee Rambler* trail
In riot through a broken border;
The clusters of the *Irish* (Pale)
Have mocked the *Earl of Pembroke's* order;
Where scattered petals fall like chaff,
With haughty tendrils curving higher,
I hear the *Lady Stewart* laugh
At *Lord Penzance's Hybrid Briar*.

Then, Saxon gardeners, gird your hose!
Once more, your fathers' deeds endorsing,
Produce a high-class medal rose
By dint of early winter forcing;
Next year, before the seedlings bud,
Let every man (that knows his duties)
Strike—were it only with a spud—
For England, home, and annual beauties!

Punch, October 9, 1907.

CHRYSANTHEMUMS AS SPECIMEN PLANTS OUT-OF-DOORS.

THE season of the Chrysanthemum has been prolonged at either end by the raising of early and late-flowering varieties, and while it is possible to have them in flower in summer time, they are also amongst the most useful of plants for furnishing a floral display early in the new year. This season the early-flowering varieties out-of-doors in most southern districts, including London, are still flowering freely in the second week of October. At fig. 111 is reproduced a plant of Chrysanthemum "Horace Martin," which has been cultivated in a pot for terrace-decoration at Gunnersbury House, the residence of Leopold de Rothschild, Esq. The specimen measures 8 feet in diameter, and forms a worthy companion to the unique specimen plants of the scented-leaved Pelargoniums that Mr. James Hudson cultivates at Gunnersbury for the same purpose, one of which was illustrated in our issue for September 28 last. Chrysanthemum Horace Martin is a vegetative sport from Crimson Marie Masee; it has rich yellow-coloured flowers, and, as may be seen from the illustration, is one of the freest flowering varieties.

recent visit were:—White Countess, of which 50,000 plants are grown, some having as many as 18 large blooms; this variety is the most important white Chrysanthemum now seen in Covent Garden market. Mercedes, a yellow Japanese Chrysanthemum of very large size; the colour of the florets is a beautiful shade of golden yellow; the flowers are at their best condition from August to October; a rule laid across the flat under side of one of the blooms gave a measurement of more than 7 inches; the stock at Uxbridge consists of 10,000 plants. Mrs. Arthur Beech is a variety of a bright chestnut colour; I noticed a batch of some 17,000 plants of this variety in rows of 500. Mrs. J. W. Scott, a white variety of high merit; about 40,000 plants of this variety are grown by Messrs. Lowe & Shawyer. Miss Barbara Miller, this flower is one of the best "yellows" grown for the market. Mrs. W. Roots is a white Incurved Chrysanthemum, and suitable for furnishing a supply of cut blooms at the end of October. La Pactole was being grown on trial. Of Cranford White, a large stock was being cultivated for furnishing sprays of

CROSS-FERTILISATION OF SINGLE CHRYSANTHEMUMS.

IN making crosses great care should be taken to select those varieties for parents which possess desired characters. Crossing by no means implies a blending of qualities; often it is simpler and results in the transmission of a single quality.

The Chrysanthemum is a Composite, and in the case of what is termed the flowered type, each flower-head is composed of two distinct sets of florets—the inner or disc florets and the outer or ray florets. The ray florets give the characteristic colour to the flower-head, whereas the disc florets are almost invariably of a bright yellow colour; the new variety Phyllis has a white centre, and is therefore a notable exception. According to the N.C.S. rules, the ray florets of the true single are restricted to three rows, if more rows are present they are termed "decorative singles." The disc florets possess both stamens and pistil; they are therefore hermaphrodite, whereas the ray florets are female only. It follows that in order to effect cross-fertilisation, the disc florets with their anthers must be removed, leaving the ray florets, which are purely female. The first thing to do in making crosses is to select the parents; this, of course, needs practice, and the specialist who is best acquainted with the constitution and good points of the available varieties is the man most likely to be rewarded with good results. Those flower-heads which are to be the seed bearers should be selected early, before the pollen from the disc florets is ripe, thereby preventing self-pollination; at the same time the entire disc or centre must be removed, leaving only the ray florets. Having taken this precaution, the ray florets should be covered over with a muslin bag until such time that the stigmas are ready for pollination. The stage at which the florets are ready for pollination is reached when the flowers are fully developed; the pistil is then divided into two at its apex, thus exposing the receptive stigma. Pollen may now be applied from the mature flowers of the selected male plant. A bright day should be selected when the pollen is dry and dust-like. Experience teaches one to use plenty of pollen. In the case of the Chrysanthemum, pollen may be satisfactorily conveyed by means of a camel's-hair brush, which is soft, and not liable to bruise the stigmas. At the same time it is not always to be recommended, particularly if one is short of pollen, since much of it is lost among the hairs of the brush, and, besides this, there is always a risk of stray pollen being left behind after efforts to cleanse the brush. A clean knife-blade, a pencil, or the operator's thumb-nail are excellently adapted for securing artificial pollination. After pollination the flower-heads should again be covered up, and the plants left in a suitable place to allow fertilisation and the ripening of seeds to take place. It is always advisable to take reciprocal crosses, for neither parent has the particular character of transmitting a special quality to the offspring. Experiments prove that the male parent no more exclusively imparts colour to the cross than does the female, and the same applies to other characters. After making crosses, each one should be labelled and a record kept for reference. *Herbert Croley.*

COLONIAL NOTE.

COSMOS SULPHUREUS.

THIS species, which was figured in the supplementary illustration issued with the *Gardeners' Chronicle* for August 24, is sparingly cultivated in a few gardens in some of the West India Islands. With moderate cultivation it attains to a height of 5 feet, forming a mass of colour, but in poor soils its average height is only 2 feet. A lemon-yellow coloured variety appeared here last year, but was unfortunately lost. *A. Patterson, Agricultural School, St. Vincent, West Indies.*



(Photograph by J. Gregory.)

FIG. 111.—CHRYSANTHEMUM "HORACE MARTIN" FLOWERING IN A POT ON THE TERRACE AT GUNNERSBURY HOUSE, ACTON: DIAMETER OF PLANT 8 FEET.

MARKET GARDENING.

CHRYSANTHEMUMS AT MESSRS. LOWE & SHAWYER'S UXBRIDGE NURSERIES.

THESE firms of market growers cultivate as many as 300,000 plants of Chrysanthemums, most of which are grown as disbudded plants, either in glasshouses or under some other form of protection. Very many of the best varieties of market Chrysanthemums have been raised, either at this nursery by Mr. J. W. Scott, or by Mr. W. Roots at Messrs. Shawyer & Sons, Cranford, Hounslow. The two firms have a working arrangement with each other, and share the stocks of most of their new varieties, which they keep strictly to themselves, for no stock of a new variety is sold by them to other houses. Prominent varieties of Chrysanthemums noticed on a

white flowers for florists' purposes. The variety Carrie is also grown for furnishing sprays of flowers. One of the best varieties noticed is Cranford Pink, now flowering in these nurseries for the first time. The variety Framfield is cultivated on a large scale in these nurseries as a late-flowering variety; glasshouses occupying an area of 2 acres were filled with it.

THE DAMSON SEASON.

CROPS of this fruit are plentiful but late. Bradley's King of Damsons is one of the best varieties, and it is of excellent flavour. Kent Cluster (syn. Farleigh Prolific or Crittenden) has produced heavy crops in some parts of the country. Stone fruits have been so plentiful this season that harm will be done the trees unless they receive some additional feeding. *Stephen Castle.*

VEGETABLES.

LATE PEAS.

It is many years since we experienced, in this part of the country, a season so favourable to the growth of late culinary Peas as the one now closing. Usually the ground during the end of July becomes so hot and dry that it is with difficulty the young plants are kept alive. A shade temperature of between 80° and 90° often obtains during July and August, with an average of 14 hours' bright sunshine daily, necessitating much labour in watering to maintain the plants in a flourishing condition. In such circumstances water needs to be applied copiously, and with some fertiliser added. In our district the rainfall this season compared with other parts has been slight. At the time of writing (September 7) the rainfall for the present year has not exceeded 16 inches, but in some seasons at this date it is considerably less. There were only three days in July when the shade temperature reached 80°, while there were 15 days on which rain fell, but these falls were not heavy, the total for the month being 1.45 inch. The nights were cold, the average minimum being 47°, and this suited culinary Peas, though the early varieties did not fill their pods very quickly. In August rain fell on 12 days, but the total amount for that month was only 1.87 inch, and the last 10 days were dry and warm. As an indication of the lateness of the crops this season, I may instance Peas of the following varieties which were sown on April 25 and gathered during the first week in September:—Gladstone, Stratagem, and King Edward varieties, sown on May 10, were ready a week later, while those sown on May 23, including Autocrat, Late Queen, and Michaelmas, will be in use during the end of October. The latest sowing was made on June 6, and these plants are now (September 7) in flower.

From June and onwards the finest marrow varieties of Peas are in season, and though the pods do not fill rapidly when the nights are cold, the flavour of the Peas is excellent. Some varieties of Peas resist an attack of mildew much better than do others, and in some parts of the country this pest is less troublesome than in other localities. In gardens where the water supply is deficient it is well to select the more robust-growing varieties for planting.

Late Peas should always be sown in an open situation, and preferably in one that is sheltered from the north and east winds. Not much difficulty need be experienced in producing supplies of late Peas, provided an ample supply of liquid manure can be obtained. Before sowing late Peas the ground should be thoroughly prepared by liberal manuring and deep digging, for Peas are gross feeders and need an abundance of moisture. In preparing soil for sowing it should be made firm, therefore it is advisable to prepare the ground some time in advance. The seedlings from these late sowings need ample nourishment in their early stages, for if they become stunted in growth at the start they are generally a failure, and it must be remembered that one robust plant will produce more pods than a dozen sickly ones. Do not waste seed by sowing it too thickly; half-a-pint will be sufficient for a row 20 yards long. There are about 650 Peas in half-a-pint of seed, the number varying according to the size of the individual Peas. A row 20 yards long, planted with two lines 6 inches distant from each other and 2½ inches between the Peas in the lines, will require 576 seeds, so that there will be sufficient Peas left to make a surplus sowing for filling any vacancies that may occur. Very tall varieties are liable to be injured by the autumn gales, and for this reason varieties of a medium height will be found the most suitable. The staking of Peas is an operation few persons accomplish satisfactorily, and it needs much knowledge and practice to place the sticks so that they may be of the greatest support to the

plants. In addition to leaning diagonally and in an opposite direction on the two sides of the row, the stakes should slant outwards so as to allow a considerably wider space between them at the top than at the bottom. *H. C. Prinsep, Buxted Park Gardens.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

DEFICIENT RAINFALL, &c.—Contrary to the expectations of your correspondent from Kent (see p. 252), the most western counties share the shortage of rain which appears to be fairly general over the country. This year, to the end of September, our rainfall amounted to 22.70 inches—7.19 inches below five years' average; and as last year's rainfall was 2.18 inches below the average, we may anticipate a very wet period at no distant date, for nature always balances matters sooner or later. There seems to be an impression that the past summer has been a wet one, while, as a matter of fact, it has rather been damp and cold. The absence of sunshine, and heat, allowed the rain which did fall to remain in evidence longer than is customary during the summer. It is singular that September 8 furnished the hottest day in the year in this neighbourhood, when we registered 84° Fahr. in the shade. But the climatological conditions, especially as regards solar heat and rainfall, have been extremely local during the past six months, and on that date many stations in the west did not record a very high temperature; dates on which some of these stations reported high temperatures were comparatively cold days in this locality. Here September also had the highest mean temperature (57.78°) of the year. From September 7 we had an absolute drought of 19 days—the longest period of drought in September for a great while; during this period the dewfalls were very heavy, twice the deposit measured 0.02 inches, and five times 0.01 inch. As there is often some uncertainty as to what constitutes a drought, it may be interesting to note the definitions formulated many years ago by the British Rainfall Authorities. An absolute drought is a period of more than 14 consecutive days on which no rain is recorded (the smallest figure recorded in any case being 0.01 inch). A partial drought is a period of more than 28 consecutive days the average rainfall of which does not exceed 0.01 inch per day. By an extraordinary coincidence the rainfall of October 1 of this year was 1.01 inch, and that of the same date last year was 1.05 inches. *A. C. Bartlett, Pencarrow Gardens, Cornwall.*

SUMMER FLOWER-BEDDING.—Probably no form of summer flower-bedding has been more popular in public parks and gardens than the old system of carpet or mosaic arrangement. These evoked great interest in their intricate designs, the variety of plants employed in them, and the remarkable neatness shown in their keeping. The whole of any one bed, however large, was fully under observation. However, the garden critic and the artist declared them to be in bad taste, and that they were cruelly unnatural, even vulgar. Up to the last, these beds attracted the greatest attention of the visitors, and when at length but one such carpet or mosaic bed was left in a public garden, so great was the attention devoted to it that iron guards had to be erected to preserve the grass near it. But now the taste, not of the public which never is consulted, but of decorative artists, has veered round to quite the other pole, and the public are treated to a series of beds full of tall pillar or pyramid-like plants, 4 to 5 feet in height, ranged with all the stiffness, formality, and regularity seen in a regiment of soldiers. These have a groundwork of Verbena, Viola, or similar plants, that soon grow loose, rank, and devoid of any beauty, because of the great shade thrown by the taller plants, and being closely planted, the base or carpet plants need to struggle hard for sheer existence. These regimental squads of tall plants are either Fuchsias, Heliotropes, Plumbagos, Streptosolens, Abutilons, Acalyphas, or similar subjects of a free habit of growth. They are saved from year to year, being pruned hard each winter to induce them to break afresh in the spring, and thus when planted out speedily furnish a bed. The question arises, are these beds attractive or

beautiful? Watch the people pass by them, and it will be seen that no one hesitates or stops to examine the plants. They are mere squads of floral soldiers, drawn up in square formation and presenting a similar face all round, yet too tall for other than the face to be seen. Half a dozen of these taller plants in a large bed very thinly disposed may be tolerated, but whole numbers of them become intolerable. It is a mistake to proclaim such bedding as superior to or an improvement upon the old carpet bedding, which needed skill to devise and to plant, as well as to maintain. Most certainly it should be an axiom in creating summer beds of tender plants that they be seen in entirety in each case. Low-growing plants, giving clearly defined bodies of colour, with light graceful plants introduced here and there to break the continuity, invariably give the most pleasing effects. The garden labourer who may have none or little of the artistic in his nature, can with a garden line plant a bed of cabbages with fair correctness. Equally well could he, with rod and line, plant one of these beds of regimental plants. Surely if there is any part of the gardener's vocation which calls for the highest display of artistic taste, it is in the arrangement of a large flower garden for summer effect, work that compels, or should compel, even greater skill and taste when it is included in a popular public garden. In spite of the modern artists, memories of Battersea Park, Heckfield, and some other once famous flower gardens, still linger in our minds. We require in our flower-beds variety of design, as well as variety of plants. We want designs that command attention, that arrest the eye, and that arouse the interest. We need beautiful combinations especially, but, at the same time, an entire absence of anything that is merely stiff, formal, or monotonous. *Correspondent.*

HOME-GROWN SEEDS.—Home-grown seeds are satisfactory if the best selection is made of the different types under cultivation. To fully maintain the germinating properties of the seed, it must be thoroughly well ripened, and if this is not possible outside, recourse must be had to inside culture in pots, pans, or boxes. This will apply to choice florists' flowers, also Stocks and Asters, and to any choice vegetables. Cucumbers and Tomatoes will be planted out in the usual way. For seed purposes all the plants named above require a warmer and drier atmosphere than is obtainable out-of-doors to finish them off. These conditions are intelligently taken advantage of by Continental seedsmen, for, although their atmosphere contains less humidity than our own, most of their high-priced strains of Stocks, Asters, and choice annuals are saved from pot-plants grown under glass. If it is to germinate satisfactorily, home-saved seed must be kept stored in a dry and cool place, exotic and tropical seeds and bulbs excepted. It is a difficult matter in dull wet weather to collect seeds, and if any are obtained they have probably ripened prematurely. The only remedy for this is to use seed of last year's crop, i.e., if it was favourably harvested, and to sow them more thickly than usual. The seeds will require a rather longer time to germinate, but the plants will be satisfactory. All transplanted subjects intended for seed purposes should be kept apart and in groups if to be kept true, as otherwise they are much more likely to be impregnated with foreign pollen. The best type should be selected, and the first harvesting is invariably the best. All the specimens selected should be clean grown, with all the best characteristics of the genera and species they represent, and they should be grown on rich and well-trenched ground. *J. D. G.*

FRUIT DISTRIBUTION.—The leading article on page 232, entitled "Plums and their Prices," is a valuable contribution to a highly important subject, and the suggestions offered are worthy of careful consideration. The matter is surrounded by many difficulties, but that they are not insurmountable has been proved by the success which has attended several efforts on a limited scale in special localities to facilitate the distribution of fruits in periods of abundance. Much has been written upon the subject, and the interests of both growers and consumers are so closely concerned that it is surprising some generally organised action has not been taken to effect improvements in our present system. It

has been repeatedly stated that the railway rates press unduly heavily upon growers, and in many instances this is undoubtedly true, the expenses being especially felt when there is a glut of fruit and prices fall to a very low point. But the rail charges do not always account for the growers' poor returns. For example, the

city to which they were conveyed at a less price than 2½d. to 3d. per lb., yet the rail charges did not amount to ½d. per lb. on the whole of the consignments. Obviously in this case the cost of carriage could not be held responsible for the loss to the growers nor the high charge to the consumers. When the Board of Agriculture's

Plums, and much more frequent information is needed to enable cultivators to take advantage of the best markets. The largest growers provide for this by private means, but smaller producers would be helped by combination on a co-operative basis. A strongly supported society might do some useful work in this connection, and the subject should be worth the attention of the National Fruit Growers' Federation, even if it went no farther than drawing up a carefully devised series of suggestions as a preliminary, including the ideas set out in the article referred to at the beginning of this letter. *R. L. Castle.*

CHRYSANTHEMUM SHOWS: BOARDS V. VASES.

—Now that the Chrysanthemum shows are coming on, I should like to call attention to the decrease of interest shown by the public at many of the exhibitions. At some shows in large towns the attendances may be as large as ever, but they are artificial, as they are bolstered up by popular military bands and other extraneous influences. Where, however, the Chrysanthemum is the almost sole attraction, there is undoubtedly a great falling-off, and the question arises, why should it be so, considering that there are quite as many lovers of the flower now as formerly. I think it unfortunate that writers and would-be teachers, on the conducting of Chrysanthemum exhibitions, cannot recognise the clear distinction between the enthusiasm of the grower on the one hand and those who only look upon the artistic side of the flower on the other. After exhibiting Chrysanthemums myself, and trying for a great number of years to teach the public both sides of the question, no one can accuse me of want of interest in the artistic aspect of the flower. I maintain that the time has not yet come—if we wish for financial success—when we can afford to throw impediments in the way of those who grow for skill only, for they are the backbone of every society, whether it be a Chrysanthemum or a Potato Society. It has been said that the R.H.S. can maintain its exhibitions without the use of show boards, but the circumstances are altogether different. In the R.H.S. there are changing interests all the year round. Specialists devote their interests to one society in its particular season, and I venture to say that, notwithstanding the lack of interest shown by the R.H.S. in special societies, without the "specials" there would be no R.H.S., as the specialist is the improver of nearly every flower, and the parent society is, after all, but an amalgamation of the whole. Unfortunately, committees, after the first flush of success of their societies, get over dominated by irresponsible persons who are quite out of touch with the zeal of the grower, and too often seek to introduce the attractive features of other countries (sometimes with advantage) without studying the English side of the question. We are not artists in the way the French are, nor are we quite so commercial as our American cousins, but I think we hold our own in the culture of our flowers. Take an Englishman cultivating his Chrysanthemums. His almost sole ambition is for a fight on the exhibition boards, where he can contest every point. Generally speaking, he does not care a straw for the artistic side, and thinks it very hard, after cultivating his flower for 365 days and then watching every floret develop, when those who cannot understand him make vexatious and impracticable rules to prevent him exhibiting. There are several aspects of this vexed question:—(1) The boards that have been commonly used may not be large enough for present-day flowers, but there is no reason why larger ones should not be employed even without altering the carrying boxes, as loose boards of a larger size can easily be carried and blooms transferred to them at the exhibitions by those exhibitors who already possess an outfit. As an exhibitor and judge, I am convinced that both for displaying the characteristics of the flower and obtaining a just decision from the judges, there is nothing of a practicable nature to equal the boards. What have we in their place? Rows of inartistic green jars, certainly no improvement on the boards, even if well arranged; but with the frequently bad arrangement on the part of the exhibitor himself, and the crowding together of the jars by the exhibition officials, the result is often more hideous than artistic. (2) Owing to the limited number of varieties asked for, these jars have counteracted



FIG. 112.—ASTER NORAH PETERS: FLOWERS WHITE, AND 1½ INCHES IN DIAMETER. AN AWARD OF MERIT WAS GRANTED THIS VARIETY AT THE MEETING OF THE R.H.S. ON OCTOBER 1.
(See note on p. 252.)

district manager of a large railway company pointed out to me that when growers were complaining they could not obtain more than an average of ½d. per lb. for their Plums, the same fruits were not purchaseable in the shops of the

markets price list was first issued it was thought it might help to favour the better distribution of produce, and in some respects it has that effect, no doubt. But a weekly list is of little service as regards such perishable fruits as

the very object the public has contended for, viz. greater variety in form and colour. As the varieties introduced became improved by the raisers, we made the competition more severe, demanding distinct varieties instead of duplicates. Now all the beautiful flowers are discarded, just for a very limited number of the largest and coarsest, and the encouragement to the raiser is of the most meagre description. (3) The great cost of transporting unwieldy packages at the risk of the blooms receiving damage, and the necessity of spending more time than need be at the exhibitions, prevents many cultivators from exhibiting, however enthusiastic they may be. Wherever the jars have been introduced to replace the boards, the competition has dwindled to small proportions and the interest has waned accordingly. Where are the thousands of amateurs and gardeners who used to crowd round the exhibits, taking note of every bloom with keen enthusiasm, and adding their names as members of the society? Although showing has certainly received a set-back, if the boards are re-introduced and the old conditions revived, the finances of societies will improve and artistic interest in the Chrysanthemum will spread more widely. *Norman Davis, Framfield.*

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

OCTOBER 1.—*Present*: Mr E. A. Bowles, M.A., F.L.S. (in the chair), Prof. J. B. Farmer, F.R.S., Rev. W. Wilks, M.A., Dr. M. C. Cooke, Prof. G. Boulger, Messrs. E. M. Holmes, J. W. Odell, A. W. Sutton, W. C. Worsdell, J. T. Bennett-Poë, H. T. Güssow, G. S. Saunders, A. Worsley, G. Massee, J. Douglas, and F. J. Chittenden (hon. sec.).

Diseased Plants.—Mr. Güssow reported that the diseased Sweet Peas shown at the last meeting were attacked by a fungus, but there was no fruit present, so the fungus could not be determined. He also reported that the leaves of *Clerodendron trichotomum* had been attacked by *Botrytis cinerea*, and the Blackberry leaves by *Phyllosticta rubi*.

Uncommon Fungi.—Mr. ODELL showed specimens of *Ithyphallus caninus*, a fungus belonging to the *Phalloidæ*, appearing somewhat erratically. The specimens were collected in Middlesex. Mr. SAUNDERS showed a specimen of *Tuber æstivum*, one of the Truffles.

Bulbils on Stem of Lilium candidum.—Mr. SAUNDERS showed one of two similar plants of *Lilium candidum* grown in a garden at Tunbridge Wells. One of the plants had been growing in rather a damp border, and had not been moved for a long time, the other was in a very dry position, and was moved two years ago. One plant bore three, the other four spikes, each beset with small bulbils in every leaf axil. The foliage was similar to that of other plants of *L. candidum* growing near by. It was suggested that possibly injury to the apex of the stem had caused the formation of these bulbils.

"Wheat-ear" Dianthus.—Mr. BOWLES showed, from Rev. Canon Ellacombe's garden, an inflorescence of a *Dianthus* raised from seed gathered from *Dianthus superbus*, but the plant was evidently a hybrid, being very dissimilar from that species. No normal flowers had been produced, but the bracts had been repeated again and again in the manner seen in the "Wheat-ear" *Carnation*, and at times also in the Sweet William.

Calycanthus Fruits.—Mr. CHITTENDEN showed fruits of *Calycanthus lævigatus* from the R.H.S. gardens, Wisley.

Bud on Cotyledon.—Mr. CHITTENDEN also showed a seedling of *Bryophyllum* sp. having a small shoot bearing two leaves growing from the petiole of one of the Cotyledons and another in the notch of the apex of the same Cotyledon, being produced in much the same way as buds are in the angles of the crenations of the ordinary leaves.

NATIONAL POTATO.

EXHIBITION AT WYE COLLEGE.

OCTOBER 2.—The importance of the Potato as a garden or field crop cannot be overestimated, and any organisation which seeks to improve methods of cultivation, and to promote the raising of useful varieties, should deserve the

encouragement, not only of specialists, but of horticulturists generally. Concentration of efforts upon a particular object must, under judicious direction, produce results of a satisfactory character, and in this way every well-managed special society has contributed something to the advance of gardening. A great work was taken in hand by the National Potato Society, which was founded some four years ago upon a broad and reasonable basis. Not only were the usual competitive shows to be provided, but a carefully-devised scheme for county and other trials of new and old varieties was included within the scope of the Society. It was rightly thought that by this means the partial demonstrations of Potato merits afforded by exhibitions alone would be supplemented by practical information relating to cropping, disease-resisting properties, &c., derived from independent and reliable testimony. The latter part of the work has been performed in a satisfactory manner generally, but, in the case of Burgoyne's Farm at Impington, attached to the University of Cambridge, it has developed into elaborate experiments of the greatest possible value, as can be seen from the records in the guide recently issued by the Cambridge Department of Agriculture.

The exhibition side of the Society's work, however, developed in undue proportion to the other part, probably against the wishes and intentions of the promoters. Trade interests of a conflicting nature became involved, and "the boom" seemed likely to be followed by an equally injurious collapse. It appeared at one time that the show of 1906 would be the last held by the Society, and that all the good work of the preceding years would be lost. At this critical juncture Mr. Walter P. Wright, who was practically the founder of the organisation, came to the rescue, and, on the strength of his representations, the Governors and Principal of the South-Eastern Agricultural College at Wye decided to offer a site for the 1907 show, free of all expense, to the National Potato Society. This welcome aid was promptly acknowledged and accepted, and horticulturists will hopefully look to the departure as a forward step to a long period of successful and useful work. At the meeting in the afternoon the Principal of the Wye College, Mr. J. R. Dunstan, Esq., very properly emphasised the necessity for the due recognition of the fact that such societies should not exist for the provision of shows alone; there is much instructional work to be done of importance alike to growers and the public. The rigid examination of novelties, the exclusion of those with new names only to their credit, the reduction of the numerous varieties already in commerce to the chief types, greater care and more general adoption of methods of combating diseases, and many other matters all demand attention. Much of this can be accomplished without any severe demand upon the resources of the Society, but there is no question that support will be forthcoming as the results of the efforts are published in the annual record of the trials, shows, and discussions.

The gymnasium at the Wye College was devoted to the exhibits of Potatoes entered for the National Society's prizes, and though the competition was not very keen, as compared with some previous years, yet the uniformity of quality was remarkable, and the whole were up to a high exhibition standard. If large size, even shape, and spotless skins were all that are essential to perfection in Potatoes, the ideal was fully attained in the leading collections at Wye; but how far the winning tubers would have justified their appearance, when cooked, is an open question. Still, a handsome Potato possesses a distinct and undoubted value, and it is quite possible to secure fine appearance with good quality.

Mr. BEN ASHTON, Latham House Gardens, Ormskirk, who has on many occasions given substantial proof of his skill as a Potato grower, was again the hero of the hour. Not only did he succeed in finally winning the Carter-Findlay Silver Challenge Cup, value £50 (being the third time he has gained the award), but the Llewellyn Challenge Cup was also secured for the second time, and another win would make him the owner of that as well. These honours were adjudged to a collection of 12 varieties, nine tubers of each, selected from a list of 20 sorts sent out by the donors of the first-named challenge cup, and those represented were as follow:—Royalty,

a handsome, long, even-shaped, white tuber, which was awarded a Silver Medal as the best white Potato in the show, Empress Queen, Monarch, Million-maker, Klondyke, Advancer, Eldorado, Empire, Goodfellow, Snowball, Ruby Queen, and Evergood, all being of exceptional merit. M. T. G. CRAMPTON, Gate House, Sissinghurst, and Mr. G. R. STEWARD, Loseley Park, Guildford, were the only other prize-takers in the same class, in the order named, and both had praiseworthy samples, the former having the only first-class dish of Northern Star we observed in the show.

Five collections of nine varieties provided a good display, Mr. A. WOODGATE, Capel Manor Gardens, Horsmonden, leading with good tubers of medium size: Recorder, Duke of York, Duchess of Norfolk, Radium, British Queen, Factor, Sensation, Windsor Castle, and Maincrop; followed by Mr. G. JOHNSON, Vicarage Lodge, Yalding. The well-proved Potatoes Factor and British Queen were very prominent in this class, and were good examples of the varieties, which include both exhibition characters and real cultural value.

The competition between societies affiliated to the National Potato Society was one of the most interesting in the show. The conditions were easy, as only six varieties were required, four white and two coloured, and a wide range was thus open to select from, as no other restrictions were imposed. The SALTWOOD SOCIETY, Hythe, won chief honours, showing well-selected, even examples of King Edward VII. and the Dean as the two coloured varieties—a handsome and distinct pair; the others being Duchess of Cornwall, Up-to-Date, Factor, and Britannia—all in first-class order. The SITTINGBOURNE AND MILTON SOCIETY had an almost equally notable exhibit. The GREEN STREET DISTRICT GARDENERS' SOCIETY and the ECCLES COTTAGE GARDEN SOCIETY, Maidstone, were also prize-takers, and some of the remainder were highly commended. In addition to the varieties mentioned, the following were noted as of special merit, namely: Purple Prefection, Scottish Triumph, Table Talk, Eastern Star, Lord Raglan, Victorious, and Queen of the Veldt; but Factor and Up-to-Date were noticeable in the majority of the collections, indicating that they had passed the trials of the season exceptionally well.

Flavour in Potatoes is an important property, too often overlooked in competitions; but a class was provided at Wye, in which two prizes were presented by Mr. R. Sydenham, of Birmingham, for six varieties to include at least three of the half-dozen named in the schedule, viz., Factor, Duchess of Cornwall, Royal Kidney, Windsor Castle, Sir John Llewellyn, and Snowdrop. Most of the exhibitors seemed, however, to be afraid to venture outside this list, and it might be advisable on another occasion to name a larger number from which selections could be made. Mr. W. COLEMAN, Buckingham, won 1st honours with an excellent exhibit, comprising the six varieties already named. Mr. A. LAWSON, Annfield, Kingskettle, N.B., was a close 2nd, his collection including a dish of remarkably handsome tubers of King Edward VII., for which a Silver Medal was awarded as the best dish of coloured Potatoes in the show. Further encouragement might be given to this department of the exhibition, especially by providing other classes, and so allowing the competitors more latitude. The cooking tests should also be repeated whenever practicable.

Three prizes were offered in each of 26 classes for single dishes of different varieties, and this is always an interesting section, as it affords an opportunity of testing the relative popularity of the newer Potatoes, or their behaviour in any particular season. On this occasion, however, the competition was too restricted to afford conclusive evidence, as in more than half the classes the entries did not exceed five. Up-to-Date was far ahead with 14 exhibits, followed by Sensation with 11, Factor and Duchess of Cornwall with 9 each, King Edward VII. and Superlative with 8 each, Snowdrop, Nobleman, and Excelsior with 7 each. The most successful competitors were Messrs. W. COLEMAN (who secured seven 1st prizes), A. LAWSON, BEN. ASHTON, A. BASILE, Weybridge; A. WOODGATE, T. KING, Chippenham; G. SCOURFIELD, Neath; W. PIPER, Ipswich; G. H. QUINT, Tring; F. G. CRAMPTON, and J. WILLIAMSON, Mallow, Ireland.

Special prizes were offered by Messrs. Webb & Son, Wordsley, for four dishes of their new varieties, and these were won by Mr. BEN. ASHTON, who was 1st with excellent, even, and handsome tubers of Chieftain, Colonist, New Umpire, and New Guardian; followed very closely by Mr. A. BASILE, who showed Progress, Stourbridge Glory, Chieftain, and Empire. Classes of this kind are much more interesting and instructive when not restricted to a few special varieties.

The handsome Potatoes Highlander, Nobleman, and Excelsior, were provided for in the single dish classes where there was a total of 17 exhibits; but Mr. Wm. Deal, Brooklands, Kelvedon, Essex, also offered three special prizes for them, which were accorded to Mr. T. KING, Mr. RIDGEWELL, and Mr. CRAMPON in that order. A question was asked whether there was more than one variety under the name of Highlander, and an opinion was expressed that in a certain district Highlander No. 2 was superior to No. 1. Presumably they both came from Mr. Deal, and probably he can explain the matter before any confusion arises.

Non-competing exhibits from the great Potato-growing and selling firms have usually formed such an imposing feature that their absence on this occasion was the more conspicuous; perhaps the distance from London was the deterrent, and when a more central position is secured they will return. Mr. JAMES GARDINER, Perth, N.B., alone sent in a collection, which, however, included a number of new varieties in favour with growers.

In reference to the Potato Show, it only remains to be said that the duties of secretary were admirably performed by Mr. W. H. Adsett, whose methodical arrangement of the exhibits was satisfactory. The prompt announcement of the judges' awards, with the courtesy extended to all officials and visitors, gained full and deserved commendation.

COLLECTIONS OF VEGETABLES.

A Kent County vegetable competition was organised by Mr. W. P. Wright, to be held in the Wye College on the same day as the Potato Show, special prizes being secured from five firms of nurserymen and seedsmen. The same regulation applied in each of the five classes, namely, six distinct kinds of vegetables were required. All gardening societies in Kent were eligible to compete, either collectively or through individual members, but the seeds had to be obtained from the firm in whose class the vegetables were entered. It was an excellent idea, and the result amply justified the experiment, for the high quality of the vegetables is rarely equalled at county shows. Besides the many prizes, a County Championship Award was offered for the best exhibit, and this honour was ultimately adjudged to the 1st prize collection from the SITTINGBOURNE GARDENERS' ASSOCIATION, in the class provided by Mr. John Charlton, The Pantiles, Tunbridge Wells. A cup and cash prizes were offered by Messrs. Harrison & Sons, High Street, Maidstone, and the chief award was won by the WYE COTTAGE GARDENERS' SOCIETY with a model collection of admirably grown and well staged vegetables. Messrs. G. & A. Clark, Ltd., Dover, T. Tutt & Sons, Ashford, and F. Webber, Tonbridge, also contributed prizes which brought some attractive and excellent collections.

The Potato and vegetable competitions were accommodated in the College buildings, but a tent was required for the exhibits in the classes provided by the local agricultural society, where fruits and vegetables were included, though the main features were capital displays of eggs, honey, and dead poultry. Besides these various attractions an interesting collection of Apples grown in the College gardens was staged by Mr. DEADMAN in one of the laboratories. Some of the most useful varieties in cultivation were represented by excellent fruits from dwarf trees.

LECTURE ON POTATO DISEASES.

The officials at Wye are energetic, enterprising, and distinctly up-to-date, one result of these valuable qualities being that on the occasion of the National Potato Society's show it was also arranged a lecture should be given on Potato diseases, to be followed by discussion. The judging was not, however, completed in time to allow this plan to be carried out as at

first intended, but though late a large audience ultimately gathered in the lecture hall. The principal of the college, M. J. R. Dunstan, Esq., presided, and after a few introductory remarks by the chairman of the National Potato Society (Mr. W. P. Wright), Mr. Dunstan gave a brief but important address, indicating the direction in which the society might perform increasingly useful service in the future by developing the educational and scientific sections of its work. The lecture on Potato diseases by Mr. E. S. Salmon, F.L.S., followed, and dealt principally with the common scab and the black scab. The former is now determined to be due to the fungus *Oospora scabies*, for many years a troublesome pest in some soils and districts; but the other is of recent introduction, and is believed to be confined as yet to a few localities. The name given to the black scab fungus is *Chrysophlyctis endobiotica*, and the disease is regarded as of a very serious character, since it cannot be checked by the means adopted against other diseases. This and the other pests were clearly illustrated by lantern slides, and methods of preparing Bordeaux mixture were also explained and illustrated in a similarly lucid and interesting manner. A few questions were asked, but there was no time for a full discussion.

Correspondent.

Obituary.

CHARLES DAVIES.—We regret to announce the death, on the 20th ult., of Mr. Charles Davies, at Wells, Somerset. Mr. Davies was for many years gardener to Lady Howard de Walden at the Mote Park, Maidstone, and afterwards to the Baroness Adolphe de Rothschild, at Pregny, near Geneva. In 1890 he was awarded the Worshipful Company of Fruiterers' Silver-Gilt Medal for 50 dishes of Apples and Pears at the Guildhall Show. In 1889 he won the Silver-Gilt Bank-sian Medal awarded by the Royal Horticultural Society.

DR. EDWARD A. HEATH.—*The Times*, on October 10, contains the announcement of the death of Dr. E. A. Heath, of Ebury Street, S.W., and Shoreham, Kent, at the age of 68 years. Dr. Heath was a Fellow of the Linnean Society, and had studied botany and entomology.

VARIORUM.

DISTURBING THE PEACE ON SUNDAY.

Herr Gröbel, the owner of a vineyard at Maxdorf, in Germany, was recently charged, with one of his workmen, before the justices with having syringed or sprayed his vines in the vineyard on a Sunday, and fined 1 mark, or in default one day's imprisonment. Gröbel's excuse was that the spraying was a pressing necessity that could not be deferred, not even on a Sunday, as the *Peronospora infestans* was no respecter of Sunday tranquillity. With this view of the matter, the Bench did not agree. The vineyard owner carried his case to the Sheriff's Court, which reversed the verdict, holding that the spraying was not in the nature of Sunday work, and its non-performance would have caused great injury and loss to occur.

GARDENING APPOINTMENTS.

Mr. P. MEYER, as Landscape Gardener to Messrs. R. VEITCH & SONS, Exeter.

T. F. E. HOGGIN, for the past 6 years Gardener to E. GREY, Esq., King's Heath House, Birmingham, as Gardener to C. E. JEFFCOCK, Esq., Wales Manor, nr. Sheffield. (Thanks for contribution to R.G.O.F. Box.)

Mr. W. COOK, for 74 years Foreman at Silverlands, Chertsey, as Gardener to Sir PHILIP WATERLOW, Bart., Trosley Towers, Wrotham, Kent.

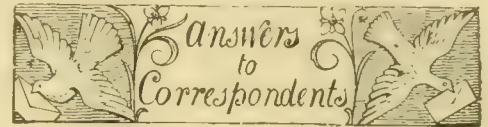
Mr. C. HART, for the past 11 years at Underwoods, Etchingham, as Gardener to Miss TATE and Miss TANNER, Caldecote Towers, Bushey Heath, Herts.

Mr. THOS. HARRIS, for the past 84 years Gardener to A. H. HARMAN, Esq., Lower Grayswood, Haslemere, as Gardener to BARCLAY DAY, Esq., Dene End Gardens, Haslemere.

Mr. C. OAKFORD, for the last 5 years Gardener to COL. BOYD, Crofton House, Titchfield, Hants., as Gardener to LADY BROWNLOW, Warfield Hall, Bracknell, Berks.

Mr. H. WILLIAMS, for 10 years Gardener to E. B. BEAUCHAMP, Esq., Trevice, Redruth, as Gardener to ALFRED LANYON, Esq., Tolvean, Redruth, Cornwall.

Mr. F. L. PIKE, for the past 7 years General Foreman at Escot, Ottery St. Mary, Devon, as Gardener to H. W. HENDERSON, Esq., Serge Hill, Kings Langley, Herts.



* * * The Editor will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for forming Supplementary Illustrations to this Journal.

AGREEMENT: Servant. If you signed an agreement that a month's notice should be given before relinquishing the duties of the situation, we think you are bound by its terms. It is not a general practice for gardeners to have properly drawn up agreements when taking fresh situations, but we think it would be to their advantage if the custom could be instituted.

APPLICATION FOR EMPLOYMENT IN KEW GARDENS: H. B. All the journeymen in these gardens are classed as young gardeners, and all receive a uniform rate of wages, viz: 21s. per week. Applications for employment should be addressed to the Curator, Royal Botanic Gardens, Kew. In the case of Hampton Court Gardens, you should apply to the Superintendent. Vacancies in the staffs of the gardens mentioned are not filled by advertisement; a list of young men who have applied for admission is kept, and from this, likely candidates are selected as vacancies occur.

CABBAGE BUTTERFLIES: Arden. Hand-picking is one of the surest means of destroying the caterpillars. Cleanliness in cultivation and proper trenching of the ground, rotation of crops, and dustings of gas-lime, soot, unslaked lime, etc., over the surface of the ground, are all helpful means of keeping caterpillars of all kinds in check. Chrysalids may be looked for in almost every kind of situation that is capable of affording them shelter, and many may be thus destroyed. Among other remedies which have been advised are the watering of the plants with weak brine-water or lime-water, and sprinkling the plants with very small quantities of fine salt.

CANKER ON APPLE SHOOT: K. & B. The disease on the branch is canker, caused by a fungus—*Nectria ditissima*. The fungus gains admission to the tree through a wound in the bark, and this may be caused by a blow, hail, frost, or punctures of insects. Young branches that are affected should be cut out and burned. Thick shoots should have all the diseased parts cut away and the surface smeared with clay or gas tar. Spray the trees with a solution of sulphate of iron—1 lb. to 1 gallon of water.

CARNATION: S. E. The plants are affected with the common black mould—*Heterosporium echinulatum*. Pick off and burn all the affected leaves and syringe the plants with the Bordeaux mixture. Any plants which are very badly infested should be promptly destroyed.

CARNATION SOUVENIR DE LA MAISON: Amateur. See the issues for July 2, 1898, p. 3; March 11, 1899, p. 158; and November 4, 1 99, p. 338.

CELERY PLANTS: T. H. H. The Celery spot-mould or leaf-blight is caused by the fungus *Cercospora Apii*. The best treatment is to spray the plants with an ammoniacal carbonate of copper solution when they are young, and repeat the sprayings occasionally during the period of growth. To prepare this fungicide take of copper carbonate 10 ozs.; carbonate of ammonia 5 ozs.; and water 16 gallons. Mix the carbonate of copper and the carbonate of ammonia, and dissolve it in about a quart of hot water. When it is thoroughly dissolved, add 16 gallons of cold water. Spray one plant first and note the result. Dilute the spray-fluid further if this appears necessary.

CHRYSANTHEMUM: J. P. R. There is no fungal disease in either set of leaves. The discolouration is not uncommon, but there is nothing in the leaves themselves to indicate the cause.

DIVIDING INTO TWO HALVES, AND PLANTING A LEAN-TO HOUSE, 50 FEET X 12 FEET, WITH VINES AND PEACH TREES: B. C. D. Excavate the soil to the depth of 2 feet 3 inches and 4 feet wide from the front wall the entire length of both divisions of the house. Next, in order to provide means of drainage, place in the bottom of the trench about 6 inches deep

of brickbats or clinkers, broken fairly fine on the top, covering this with thin turves, grassy side down, or, with straw litter from the stables. Should stones be more easily obtainable than brickbats or clinkers, they would answer the purpose of drainage equally well, putting sufficient gravel on the top to fill in the spaces between the larger stones. A mixture, consisting of four cartloads of the best loamy soil at command, one load of horse-droppings, and one load of old lime rubble or wood ashes, preferably lime rubble, will be suitable for the rooting medium. If the horse-droppings are not at hand, short stable manure that has been turned over several times in the process of decomposition should be substituted. All the ingredients indicated should be mixed together and turned over twice before being wheeled into the house and deposited in the trench prepared for their reception, filling this up to within 6 inches of the top in the vine section and 9 inches in the Peach-tree compartment. Trenches of the same dimensions, but 3 inches shallower, should be excavated close up to and parallel with the back wall and filled with the same kind of compost in which to plant Fig trees in the vine division. Two years hence the soil in the remaining 4 feet wide strip of old border should be excavated to the depth of 2 feet 3 inches, and replaced with the same kind of compost already recommended, making provision for drainage as before. We assume that you will plant standard fan-trained Peach and Nectarine trees against the back wall of the Peach-house. You will require two Peach or Nectarine trees for the front of the house, and these should possess clear stems about 3 feet high before the branches appear. The trees should be planted 6½ feet from each end of the house, and as close up to the front wall as the position of the hot-water pipes will permit. The trees at the back wall should be planted at the same distances from the ends as recommended for the front. This will give each tree, whether at the back or front, a clear trellis space of 12½ feet; meanwhile Tomatoes or Roses could be grown on the unoccupied spaces for two years. As to varieties of the Peach and Nectarine to grow, we should recommend you to plant Hale's Early Peach and Rivers' Early Nectarine in the front, with Crimson Galande (or Dymond) and Sea Eagle at the back. Plant the trees as soon as they are received from the nursery, spreading the roots out evenly over the soil in a slightly downward direction, and cover them with the same kind of compost as is indicated above to the depth of 9 inches, giving each tree a gentle shake in an upward direction to allow of the soil getting well in amongst the roots. Afterwards tread the soil over a little to firm it about the roots. This done, lay on a surface-dressing of horse-droppings—extending 4 feet from the trees—of 3 inches deep, and then apply a good watering. The vinery being part of the 50 feet range will accommodate eight vines, commencing at 2 feet from either end and planting at intervals of 3 feet, to consist of, say, two vines of Black Hamburgh, one Madresfield Court, one Gros Colmar, one Gros Maroc, one Foster's Seedling, one Black Alicante, and one Muscat of Alexandria, the last-mentioned vine requiring to be planted at the warmer end of the house. Should vines of this year's growth be planted early in the New Year, all the soil should be shaken off, and the roots should be disentangled, shortened back a little and then spread over the surface of the prepared soil in the manner advised for the Peach trees, covering them 6 inches deep with the compost, and afterwards treating them as recommended above for the Peach trees. You might plant three Fig trees against the back wall of the vinery as you suggest—a Brown Turkey in the centre, and a Negro Largo (or Early Violet), and White Marseilles on either side; these last two varieties may be gradually reduced and subsequently removed altogether, as the specimen of Brown Turkey requires more space to develop. The Fig trees should be planted in the manner advised for Peach trees. With regard to the heating of the houses, the two 4-inch flow and return pipes which you are fixing round the house on a level with the surface of the border and brick-work should suffice, assuming that you do not

intend to force the trees early, but owing to the fact of your dividing the house, a little alteration and extension of the heating power in the way of hot-water pipes will be necessary. It would, however, be better to have the water pipes raised 6 inches above the level of the border, and the flow pipe or pipes should be given a rise of 3 or 4 inches in the entire length of house—50 feet—say 1½ or 2 inches rise in each section from where pipes enter house. Assuming that the vinery section is situate nearest to the heating apparatus, you will require to fix a T piece in the flow pipe at the farther end of the vinery, making the connection by inserting a throttle valve between the T piece and flow, and connecting the latter by means of the said T and a length of 4-inch pipe with the return pipe at the back of house 3 feet from and parallel with the back wall, in which connection another T piece and fitted with two throttle valves will be necessary. These fixed, you can heat your vinery without heating the Peach-house, or you can heat both at the same time. But while about it, we should advise you to put an additional flow pipe in the vinery if not in both divisions. The extra cost would not be heavy.

DRY ROT: W. T. Undoubtedly you have got the dry rot (*Merulius lacrymans*) in its most luxuriant and fruitful condition. The myriad of fertile spores will prove a centre of infection. It is too late to adopt any but the most drastic measures. The woodwork you will find to be thoroughly rotten, the disease being fostered by moisture and the absence of a current of air. We fear that there is no alternative but to remove all the infected woodwork and disinfect with lime thoroughly before replacing with fresh wood. Provide air-bricks to allow air to circulate under the floor.

FIG TREES IN VINERY: W. B. We do not think your Grapes are likely to suffer from any such influence as you describe from the Fig trees. There are, however, other reasons why vineries should be reserved exclusively for Grape-culture, where it is convenient to do this. The two crops require different treatment at the same time, and Fig trees are liable to attacks from scale insects which might be communicated to the vines.

FUNGUS: C. B. G. The fungus is *Dædalea confragosa*.

HYBRID TEA ROSES: B. L. Your list is a good one, but it by no means exhausts the number of really good Hybrid Tea varieties. Among others might be named Antoine Rivoire, Dean Hole, Grüss an Tepitz, Gustav Grunerwald, Gustave Regis, Lady Ashtown, La Tosca, Liberty, Madame Jules Grolez, Madame Ravary, Prince de Bulgarie and Viscountess Folkestone.

INDENTURES: Subscriber, Kerry. You are not likely to require a solicitor. It will first be necessary to determine where the youth is to be apprenticed, the kind of agreement or indentures that would be approved by both parties might then be discussed. In gardening, long periods of apprenticeship are inadvisable, it being better that the youth should move from place to place in search of further experience, say after the first three years.

LILIUM CANDIDUM: C. T. The bulbs are deteriorating through their crowded condition, and it will therefore be advisable to lift and replant them.

PEACHES: Daisy. Your Peach tree having been raised from a seed planted only five years ago has succeeded uncommonly well, if it has borne 100 good fruits this season. The specimen you sent us suffered considerable damage in the post, and we were therefore unable to test its flavour under the best conditions. At the same time we think the variety is a good one. The fruit was of moderate size, had developed considerable colour, and possessed a satisfactory degree of flavour. Its cropping qualities are certainly of the best. If you still possess fruits in a satisfactory condition for transport, you might send half a dozen to the meeting of the Royal Horticultural Society, which will take place on Tuesday next, in the Royal Horticultural Hall, Vincent Square, Westminster, and state that they are submitted for inspection by the Fruit and Vegetable Committee.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time; they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. Correspondents not answered in one issue are requested to be so good as to consult the following numbers.

FRUITS: H. H. Your fruits were good specimens, but we are unable to name them because they were over-ripe when they were received, the interior of each being partially decayed.—W. D. and S. 1, Golden Spire; 2, Old Nonsuch.—E. Lewis. 1, Catillac; 2, Beurré Hardy; 3, Louise Bon of Jersey; 4, Beurré d'Amanlis; 5, Beurré Clairgeau; 6, Beurré Superfin.—C. R. & Co. Reine Claude de Bavay, Denniston's Superb. No numbers were attached to the Plums.—C. Kerry. 1, Warner's King; 2, Stone's; 3, Gascoyne's Scarlet; 4, the Queen; 5, Forge Apple; 6, New Hawthornden.—P. U. M. 1, Triomphe de Jodoigne; 2, Fondante de Cuerne; 3, Doyenné du Comice.—John Macers. The cuttings must have been taken from the old stock, below the point at which the Crimson Queening was grafted. The Apple is Hanwell Souring.—Cona. 1, Scarlet Golden Pippin; 2 and 3, Worcester Pearmain.—Beurré. 1, Souvenir du Congrès; 2, Fondante d'Autonne; 3, Brockworth Park.—C. F. C. 1, Apple Pitmaston Pine.—Coleman. Please send again when the fruits are nearly ripe. It is almost impossible to name such hard green fruits with any degree of accuracy.—H. T. H. Pears Williams' Bon Chrétien.

PLANTS: A. R. H. 1, Aster Novi Belgii candida; 2, A. N. B. aureo; 3, A. puniceus. You should have given the approximate height of the plant, as this information is most helpful in determining the variety.—H. B. 1, Aster Novi Angliæ præcox; 2, A. cordifolius major; 3, A. ericoides (probably type); 4, A. undulatus.—Miss M. E. 1, Colchicum autumnale plenum; 2, C. Sibthorpii; 3, C. montanum; 4, C. Alicium; 5, Merendera Bulbocodium; 6, Crocus zonatus; 7, Hæmanthus puniceus; 8, Lobelia Cavanillesii.—W. H. W. 1, Lycopodium clavatum; 2, L. annotinum.—A. R. Scabiosa caucasica.—E. C. C. D. 1, Too small for identification; 2, Sedum spurium.—J. McP. Senecio tanguticus.—H. D. Cortaderia argentea, Stapf, a male inflorescence. See *Gardeners' Chronicle*, December 4, 1897, p. 396.

PRIMULA: H. B. The species which most frequently causes irritation and eruption upon the skin of those persons who have occasion to handle the plants is *Primula obconica*. See notes in the issues for August 31, p. 173, and September 14, p. 205.

RHODODENDRONS: R. V. & S. Rhododendrons are not virulently poisonous to cattle, but it is conceivable that were the beasts to eat greedily of the bushes the effects would be serious. We believe that cases of death have been reported from this cause.

SOCIETIES: *Agriculturist*. The conditions in either case are only financial ones concerning entrance fees and annual subscriptions. Write to the Secretary, Royal Horticultural Society, Vincent Square, Westminster, and Secretary, Linnean Society, Burlington House, Piccadilly, London, W.

VERBENA: J. H. E. The leaves were so crushed when they reached this office that it was impossible to determine the nature of the affection.

COMMUNICATIONS RECEIVED.—La France.—J. S. S.—H. C.—L. L. T.—B. T. A.—W. J. W., Ltd.—E. D.—E. F. C.—J. C.—J. F. S.—W. J. M.—J. G. W.—Amateur—C. R. F.—H. E.—H. W. W.—Brighton—H. W.—J. R. J.—H. J. C.—C. T. D.—C. R.—M. A. P.—J. C. A.—D.—P. L. H.—W. H. G.—A. W.—C. J. G.—Jas. R.—F. Mason—G. J. S. S.—W. K.—F. Roemer—T. H.—H. T. G.—W. E. G. Prof. T., South Russia.

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THE

Gardeners' Chronicle

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LATE RIPENING PLUMS.

"PLUMS, indeed," may be remarked by some cultivators, "I shall cut down many of my trees, for pecks of fruit have been wasted this year!" Undoubtedly this is the case, but the fault probably lies in having planted early and mid-season kinds selected for their good cropping qualities, and in neglecting to plant varieties which ripen late in autumn. The crops to be obtained from a well-selected score of the best varieties of Plums are always valuable to every owner of a garden, but so plentiful are the choice mid-season sorts that a great number of cultivators never extend their selection beyond them. It is not because there is any further difficulty in cultivating the later kinds, for if grown against walls almost any aspect will suit these, and they may be successfully fruited if they are kept in check by biennial root-lifting or pruning.

A collection of Plums growing against a wall 100 yards long in these gardens is extremely valuable for dessert purposes, most of the trees being of late ripening varieties. Peaches Nectarines and Figs being past,

the latest Plums meet with every appreciation, notwithstanding over abundance of the earlier supplies. Few there are who do not relish well-ripened fruits of the many kinds of Gages. Apart from the indispensable Greengage, there is Golden Drop, now carrying a very good crop and facing due north. Many people believe this variety must be given the best position in the garden, but it is not so. The fruits obtained from a tree growing in a sunny aspect are, no doubt, better in quality than those that may be ripened on a wall facing to the north, but for the best latest ripening Plums a western aspect is sufficiently good. From a wall having such an aspect the variety Angelina Burdett has just finished bearing, and a good succession of fruit is now obtainable from Golden Transparent. It only requires a little dry weather in order to ensure the development of that rich flavour and beautiful golden colour so characteristic of this variety. These lines are written on October 10th, and it is possible that by the time they are published the fruits will have been gathered, likewise those of the variety Bryanston Gage, which are both rich and juicy, being very much after the style of Greengage, but much larger in size. This variety is first-rate when cultivated against a wall. Before choosing the sorts for planting every cultivator should determine the object he has in view, and in the instance I have mentioned the quality of good flavour was primarily studied. Of the three or four Transparent Gages I believe the late ripening variety is the best, but they all possess such a vigorous habit of growth that they require to be frequently checked by root-pruning, especially if the wall is not a high one. There is a difference of three weeks in the ripening period between the original Gage and Early Transparent Gage, but the former is better than the latter in point of flavour.

An extra large fruiting variety of Greengage is that known as Reine Claude de Bavay. I have reason to expect that in another week or ten days this variety will be fit for the table, but it may be necessary to put the fruits for a short time into a heated atmosphere to ripen them perfectly. These fruits, like most of the Gages, can be kept for some time in good condition if wrapped in silver paper. Our crop of Count Althann's Gage is over. The fruits of this variety are of an attractive appearance and possess high merit; a recently-planted tree of Bonne Bouche is carrying a satisfactory crop of large fruits, which appear to be capable of keeping for some time. Decaisne, although not a Gage Plum, is well worth growing. The fruits are of large size and are oval in shape, being greenish yellow in colour, very handsome, and possessing delicious flavour. Of purple Plums Reine Claude Violette upholds its reputation as a good late-ripening variety, the qualities of which are most apparent when the fruits are allowed to hang until the skins begin to shrivel; the flesh is then rich and sugary and of a delicious flavour. It is curious that some kinds drop so readily from the shoots when approaching maturity, and others adhere to the tree until decomposition sets in. Ickworth Imperatrice is an October fruit, of

good flavour and dark colour; it is much improved if allowed to hang and shrivel, although the quantity of the juice is considerably diminished by this treatment. The saccharine matter increases, which shows that although the season is late when these varieties ripen, and therefore not so conducive to the development of good flavour, there is a chemical action which transforms these juices into saccharine matter very much as is found to be the case in cider Apples which, if left to thoroughly mature, not only make a superior-flavoured liquid, but are much denser in sugar matter.

I must not omit to mention Brahy's Greengage, which is generally at its best from the end of September until the second week in October. It is a very fine late Plum of large size, and suitable for exhibition. It is not a very sure cropper, but the fruits it is capable of yielding well compensate the cultivator for his labour.

It is a pity Coe's Late Red has not the same superior qualities as Golden Drop, it would then give us what is much required, namely, a good, late ripening, red dessert fruit. Notwithstanding the many kinds now in commerce, there is still room for the hybridist to produce a high-flavoured fruit of that colour. It is to be regretted that the large handsome late-ripening variety Autumn Beauty is not of better quality, for it can only be properly described as a culinary Plum. W. H. Clarke, Aston Rowant Gardens, Oxon.

POLYSTICHUM ACULEATUM
VAR. PULCHERRIMUM DRURYI.

THE two chief native species of Shield Fern or Polystichum—*P. angulare*, the soft Shield Fern, and *P. aculeatum*, the hard Shield Fern—have been most prodigal in producing sports of great diversity, and spores from these have furnished plants of even greater diversity by selection, so that no further advance in this direction appeared possible—at any rate, as regards types. The variety under notice (see fig. 113), and which was awarded a First Class Certificate by the R.H.S. Floral Committee on October 1, affords, however, another variation of much beauty. This has sprung from a plant found wild many years ago in Dorsetshire. Dr. Wills, resident near Chard, was an enthusiastic Fern hunter, and he supplemented his own finds by many discoveries of his even more fortunate neighbour, Mr. Moly, whose list embraced no fewer than 600 varieties. Dr. Wills had naturally assumed that he had exhausted, at least, the immediate vicinity of his house, but he was astonished and delighted one day by a farm labourer who brought him a Fern gathered in a hedge in the vicinity. This proved a form of *P. aculeatum* of peculiarly graceful form, and which was consequently named *P. a. pulcherrimum* (Beavis), that being the finder's name. Although a singularly robust grower, and of a larger size than the normal, it remained perfectly barren for many years, though, fortunately for other Fern lovers, it proved fairly liberal in offsets, and consequently in time the variety was contained in most collections of note. An offset from the late Mr. G. B. Wollaston's plant came into my possession some 25 years ago, and a division of this plant was given to a neighbour, Mr. C. B. Green, and under his care this thrived to such an extent as in a couple of years to quite eclipse my own plant in size. It occurred to Dr. Stansfield and myself, on visiting Mr. Green's collection, to examine the fronds of his specimen for spores, and to our delight, with the

aid of a lens, minute sori, consisting of two or three sporangia or spore capsules, were detected. These spores were sown, and in time a considerable batch of young plants appeared, but it was not until these had been pricked out and grown to some size, that several very promising, slenderly-divided plants were observed, both in Mr. Green's batch and in my own. As these progressed it became evident that a new and beautiful "break" had occurred. The bulk of the remaining plants promise to be fairly replicas of the parental type, and some half dozen or more have reverted almost to the normal. Those of the new type number fully a score, and only one intermediate form has so far been detected. There is a certain amount of subvariation among the sports, and one of my own plants has exceptionally graceful pinnules, so that it has been named *P. ac. pulcherrimum Drueryi*, thus retaining an indication of the parentage. The peculiarity of this section lies in the extreme slenderness and length of the subdivisions of the fronds, the falcate pinnule of the parent, about $\frac{3}{4}$ inch in length and $\frac{1}{4}$ inch in width, being transformed into a quite linear one 2 inches or more in length, and prettily serrate near the tip, this serration in *P. ac. pulcherrimum Drueryi* developing into a further series of linear pinnulets forming a sort of fringe. The parental form is of erect habit, but the new type has spreading, almost pendulous fronds, so that a difference exists which renders it difficult for any but the raisers to credit the parentage. Whether the new type will be fertile remains to be seen; the plants presumably have by no means reached maturity, but they are of a type which might be expected to produce basal bulbils, and one has already appeared on a rather distinct plant of Mr. Green's raising, in which the make and habit differ markedly from the rest. Besides the plant certificated, I have nine plants which I propose to name *P. ac. gracillimum*. Dr. Stansfield has informed me that a number of years ago sori were noticed on *P. ac. pulcherrimum*, but nothing resulted from a sowing, and this season he has observed others on a plant in his possession; they are, however, always more or less rudimentary, but in the case which has yielded the results recorded, the sporangia were quite perfect, though few. *Chas. T. Druery*.

NEW OR NOTEWORTHY PLANTS.

PASSIFLORA \times ALLARDII.

THIS is a hybrid between *P. quadrangularis* ♀ and *P. cœrulea* Constance Elliot, raised not long since by Mr. E. J. Allard, when foreman of the plant houses of the Botanic Garden, Cambridge. It is chiefly remarkable for the small evidence it affords of the mother parent, but there is still enough to show that there can be no mistake in the record. The petals are almost pure white, but with just a pink tinge, while the filaments of the corona are of deepest cobalt-blue, showing the white marks or bars below, both conspicuous features derived from *P. quadrangularis*. Although the foliage is totally unlike that of *P. quadrangularis*, and might pass much more readily for some condition of *P. cœrulea*, it is still quite distinct. The leaf has usually three broad lobes, and has never the numerous, narrow divisions usual in *P. cœrulea*.

It may be remembered that the well-known *Passiflora Imperatrice* Eugene was obtained from a similar cross. In this cross the typical *P. cœrulea* was used, and it is interesting to observe the differences obtained by crossing with the variety Constance Elliot. The corolla is much whiter and the corona much darker, so that in coloration these parts of the flower are in stronger contrast. *R. Irwin Lynch*.

THE SWEET PEA SEASON.

NOTWITHSTANDING the many difficulties with which, during the past season, all cultivators of Sweet Peas have had to contend, the plants have seldom grown better or flowered more luxuriantly than they have done this year. In many large Scottish gardens which I have visited recently, and especially in those of the Earl of Stair at Lochinch and Castle Kennedy, in this county, they have reached a truly marvellous height. In my own somewhat shady garden such superb varieties as King

Horace J. Wright, of exquisite deep violet hue. Both of these, notwithstanding their strict adherence to the production of only two flowers on each stem, I admire very much. Shasta and Helen Pierce, sent to me all the way from the native California by the distinguished raiser, M. Lester Morse, have also succeeded admirably in my garden though I cannot doubt that the flowers would have been considerably larger had I been able to give them a more open and sunny situation. Frequent manuring, however, has helped them considerably; during the autumn months it has also not seldom given a manife-

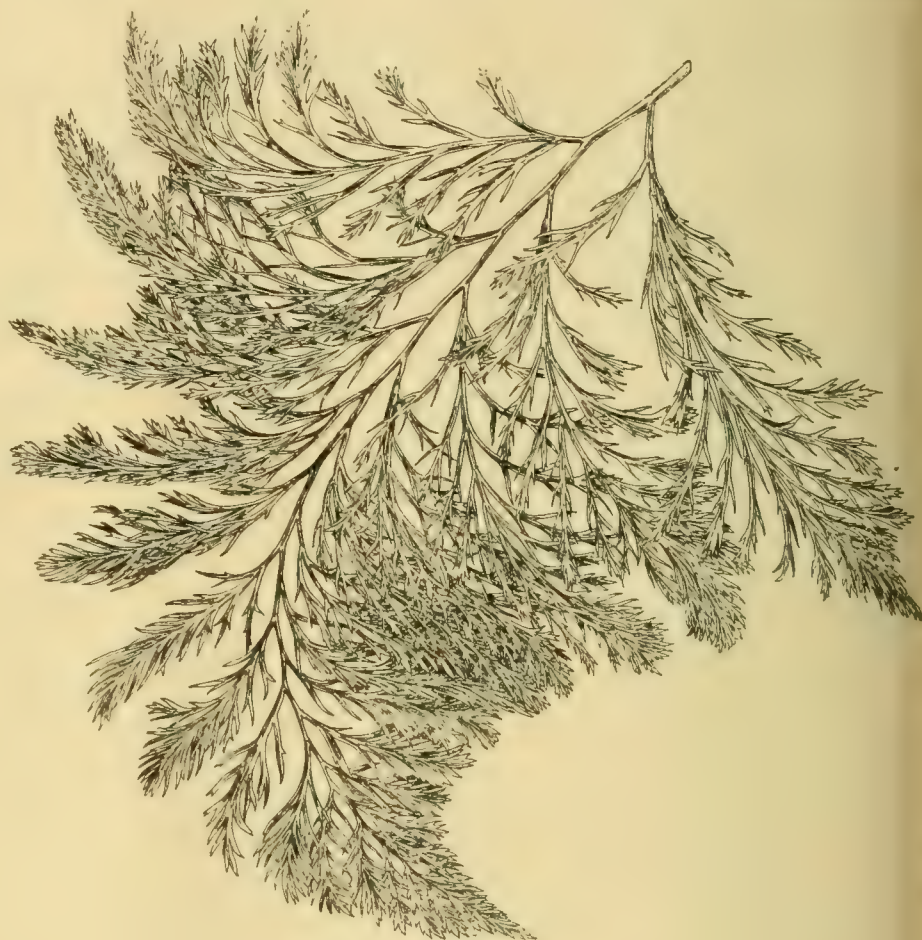


FIG. 113.—*POLYSTICHUM ACULEATUM* VAR. *PULCHERRIMUM DRUERYI*.

Edward VII., Dorothy Eckford (assuredly the largest and loveliest of all pure white Sweet Peas), Countess Spencer, and Queen Alexandra have been magnificent, alike in size, colour, and texture, as by reason of their splendid characteristics they must always be, when so highly favoured as they were during the month of September, with benignant atmospheric influences. Several varieties of quite recent introduction have also been very beautiful here, conspicuous among which were Earl Cromer, of very distinctive crimson-lake colour, and

stimulus to much older and more reliable varieties. I find, for example, that such periodical applications tend to intensify both the size and colour of such grand introductions as King Edward VII., Queen Alexandra, and the now almost entirely superseded Scarlet Gem. Of the variety last mentioned, so greatly eulogised on its first appearance, a precious variation—if such it may be termed—has come to us from the Santa Clara Nurseries in California, and it is warranted not to "burn" in the strongest sun. If it does not "burn" it will be

much valued by those numerous cultivators who have hitherto regarded this regrettable tendency on the part of the far-famed Scarlet Gem as a serious drawback. But it is also a flower of but limited dimensions at the best, and unlike most of its highly-coloured contemporaries it does not attain to a commanding height. The variety Queen Alexandra is a much more vigorous production, and one that I think is likely to endure. I have been much gratified by the achievements of my own beautiful namesake this season in this and other gardens, also by its prominence, of which I have heard much, at the Holland House and other Metropolitan shows. It is especially effective, I find, when grown between such varieties as Sadie Burpee and the Scarlet Gem.

One of the most attractive of the pure white Sweet Peas, and probably the most recent of any consequence, is Nora Unwin, which has the exquisitely waved or crenulated form of Countess Spencer, a variety which has given us many attractive derivatives. Some cultivators predict that this will, ere long, supersede Dorothy Eckford, but I question if it will ever prove sufficiently vigorous or floriferous to achieve such a result. I find there is a considerable difference of opinion regarding the merits of Henry Eckford—I mean, of course, the orange-coloured flower which bears that name. For my own part, I think that in what may be termed artistic situations—where it has a strongly contrasted environment—it is undoubtedly most effective. Mrs. Collier is an exquisite pale primrose-coloured Dorothy Eckford, and E. J. Castle, whose supposed resemblance to another variety of similar extraction has been too much emphasised, while florally effusive in no common degree, possesses a charming colour combination of salmon and rose. David R. Williamson, *Manse of Kirkcaldon, Wigtownshire, Scotland*.

FOREIGN CORRESPONDENCE.

ODONTOGLOSSUM PESCATOREI, LINDEN,
versus O. NOBILE, REICHB. f.

OF late years a tendency seems to have sprung up on the part of certain writers to replace the name of *Odontoglossum Pescatorei*, Linden, by that of *O. nobile*, Reichb. f. It is, however, beyond question that the first of the above-mentioned specific names is the one which ought to be retained. The following quotation from *Pescatorea* (1860), of which the younger Reichenbach was a distinguished contributor, supports this view: 'The original description of this species was given by Reichenbach fil., in *Linnæa*, xxii., p. 850 (1849). But under the name *Odontoglossum nobile* the word 'callis,' by a typographical error, appeared in place of 'cavinis' [sic]. Further, the labellum is said to be purple, and the rest of the floral whorls rose-coloured.' On this account Dr. Lindley was unable to recognise with certainty the identity of *O. Pescatorei*, Linden, and *O. nobile*, Reichb. f. The latter author, however, has since then definitely stated that the same plant is designated by the two names, and he has generously abandoned the right of priority and adopted the specific name *Pescatorei*, under which the plant is now generally known. Moreover, whenever Reichenbach has had occasion to describe a new variety of *O. Pescatorei* he has always used this name (e.g., *O. Pescatorei Leucoxanthum*, *Gardeners' Chronicle*, 1887, p. 606; *O. Pescatorei Schröderianum*, *Gardeners' Magazine*, 1892, p. 135, and other examples could be cited).

Having regard to the above facts, there can remain no doubt as to *O. Pescatorei* being the name which should be retained for this species.

Perhaps this short note, by correcting some errors of citation or description that have recently appeared, may serve to conduce to the more precise naming of Orchids. L. LINDEN.

[To acknowledge the right of an author to withdraw a prior name on relatively slight grounds is not in accordance with modern usage. Ed.]

THE ALPINE GARDEN.

SEDUM BREVIFOLIUM POTTSII.

THE smaller Sedums are valuable for many purposes in the garden, and are especially desirable in the rock-garden, where they can be employed for covering dry rocks, on which few other plants will grow, or as a carpet for dwarf, early-flowering bulbous subjects. One of the prettiest of these dwarf species is *Sedum brevifolium*, a charming little Stonecrop not more than an inch or two in height, even when its white flowers are expanded, and having thick, short leaves that are charmingly tinted with white and chocolate. Still prettier is its variety *S. brevifolium Pottsii*, which was, I believe, introduced from the Continent by the late Mr. Potts, Fettes Mount, Lasswade, Edinburgh. This variety is smaller in all its parts than the type. The leaves, which have a white, mealy appearance, are in parts pleasingly tinted with shades of red and brown. Owing to its being so dwarf, the plant is especially valuable as a carpet or ground-work for taller subjects. Unfortunately, it has proved somewhat tender in some parts of the country, especially in those which are subjected to a heavy winter rainfall combined with a low temperature. A dry soil and a sunny position should be given this beautiful little Stonecrop.

POLYGONUM VACCINIFOLIUM.

UNDER ordinary conditions this Knotweed, which has been described by an authority as "one of the most useful plants in cultivation for rockwork," is easily grown, but in some gardens it is found almost impossible to cultivate it successfully. Few plants in the rock garden are more pleasing than this Whortle-leaved Knotweed from the Himalayas, with its prostrate habit, its neat, glossy leaves, and its long spikes of pretty rose flowers. A well-grown specimen hanging over a stone or small rock has an extremely pretty appearance. The growths, which are of a woody nature, are often destroyed by late frosts. This is particularly the case in the north, where there are few gardens in which this beautiful Knotweed is to be seen.

In my garden I find it succeeds in a cool and partially shaded position, in a soil that is well-drained, although the plant requires plenty of moisture and perfect shelter from cold, cutting winds. I have a plant of this species that has been grown in the same spot without disturbance for two years. It is planted close to the base of a rockery that faces almost due east, and protection from north winds is provided by a high wall about 6 feet away, and from the east by one about 20 feet distant. Another specimen planted on an open rockery succumbed in the spring.

ERIGERON GLAUCUS.

ALTHOUGH frequently listed in hardy plant catalogues, this species is not often met with in gardens, and this is the more difficult to understand, as there are many flowers of less beauty and more troublesome of cultivation that are largely planted. Many of the newer *Erigerons*, or *Fleabanes*, are much inferior as a garden plant to this once well-known species. There is in my garden a plant which I have had for at least 15 or 16 years, and which, after being for some 13 or 14 years in my former garden, was removed to my present one, where it is now thriving.

Erigeron glaucus grows from 6 inches to a foot high, and produces a number of rather large, purple-coloured flowers well above its glaucous leaves. It is not very particular in the matter of situation, and will flower in a spot facing north with apparently almost equal freedom to a plant in one facing south. The species is a native of Western North America, whence it was introduced as far back as 1812.

Propagation can be effected by seeds, division, and cuttings.

A variety of *E. glaucus*, named *semperflorens*, is mentioned in the list of new garden plants of the years 1905, in the Appendix to the *New Bulletin* of 1906. This is said to be "a dwarf, floriferous variety," and to come from California. It is described in the *Revue Horticole* from the garden of M. Ph. de Vilmorin, Verrières, France. S. Arnott, *Sunnymead, Dumfriess*.

THE SUNLESS SEASON.

THE Rothamsted Agricultural Station's meteorological records show that the season of 1907 has been exceptionally sunless and cold. The bright sunshine for the nine months, January to September inclusive, amounted to 1,356 hours, being 48½ hours less than the average record at this station. The four months of January, February, March, and September, each gave an excess of sunshine, while each of the other five months, April to August inclusive, recorded a deficiency. These months included the more active growing period of the year, with the blooming, fruiting and maturing time of most of the fruit crops.

The total rainfall at Rothamsted for the nine months amounted to 16.68 inches, being 3.42 inches less than the average for the past 54 years in this neighbourhood, which is equivalent to a deficiency of 345 tons of water on each acre of land. The three months of April, May and June each gave an excess of rainfall compared with the average, while the other six months each recorded a deficiency of moisture.

The mean shade temperature showed four months above average and five months below the average in warmth.

Under these weather conditions we find that while Cherry trees and most stone fruits, including the Wild Sloe, as a rule, produced abundance of blossom, but very little of it "set"; consequently in this district there was a great deficiency of matured fruit of these kinds.

Strawberries responded to the abundant rains of April, May and June, and a good average quantity of fruit was produced, but the sunless condition of the usual ripening period almost proved disastrous; a spell of warmth, however, quickly brought the crop forward, although the fruit lacked colour and flavour.

Apples of most varieties are an abundant crop as far as numbers of fruit are concerned; in fact many trees are greatly overlaid with fruit, although almost without exception the Apples are extremely small and flavourless. Even Cox's Orange Pippin and the Beauty of Bath this year fail to sustain their reputation for quality and richness of juice.

It would appear that while the moist, calm weather enabled the blossoms to "set" for fruit, the excessive cold nights chilled the sap as it ascended to the growing parts of the trees, with the result that the foliage in many instances curled up and became blighted. The writer saw some Apple trees which were exposed to chilling north-easterly winds with their leaves in a condition as if they had been scorched by a fire, and with the branches heavily laden with poor shivelled-up fruit, while Apple trees on either side of them that were protected from the cold by a high brick wall were yielding very fair sized fruit, and none of the leaves were curled or blighted.

The lack of bright sunshine in the daytime appeared to result in a deficient assimilation of carbon from the atmosphere by the leaves of the Apple trees; consequently there was a corresponding want of development of the carbohydrates in the fruit, hence the small size and poor flavour.

Blackberries on the hedges promised a fair crop, but the fruit is ripening very badly; the berries are small and tasteless.

Hedge Nuts and Filberts are a scanty crop in this district. J. J. Willis, *Harpenden*.

IVY-LEAVED PELARGONIUMS.

Of the numerous tender subjects that are employed in the embellishment of our gardens and greenhouses, few if any are more in evidence than the different varieties of the double-flowered Ivy-leaved Pelargonium. Under glass they may be grown as bushes of varying sizes; those of a drooping habit form delightful subjects for planting in hanging baskets, while the more vigorous growing kinds are suitable for training up pillars, walls, or similar positions in the greenhouse.

Large specimens are extensively used out-of-doors for planting in the large mixed flower-beds that are now frequently met with in public parks and gardens, or for plunging in the grass. As simple bedding plants, many of the varieties are suited for ordinary summer use, and they are largely used for furnishing window-boxes, draping of balconies, &c.

The present type of Ivy-leaved Pelargonium is a comparatively recent one: the first of the class was the variety *König Albert*, raised by Herr Oscar Liebmann, of Dresden. It was distributed in this country in 1875 by the late Mr. William Bull, of Chelsea, and although the price of each plant was 15s., it sold readily. In colour the flowers of *König Albert* were a bright violet-pink. Though several new varieties were distributed within the next few years, they were all too much alike, and it was not until 1880 that the first decided "break" appeared. This was seen in *Gloire d'Orleans*, a variety with rose-red blossoms. It was raised by M. Crousse, who the following year distributed another variety named after Madame Crousse, characterised by a loose, trailing habit, with salmon-pink flowers. This is still one of the most popular of all Ivy-leaved Pelargoniums grown for market purposes, and probably the only other varieties cultivated equally extensively are *Souvenir de Charles Turner*, sent out by the late Mr. Robert Owen, of Maidenhead, and *Galilée*, raised by M. Lemoine, of Nancy, and put into commerce in 1887.

After Madame Crousse a large number of varieties were raised on the Continent, some of which are still favourites. Judging by the stiff habit of growth and the round shape of the flowers of many Ivy-leaved Pelargoniums, they contain an admixture of the Zonal type, in some cases perhaps to a very small amount. This circumstance will account for the bright colours of many of their flowers.

Instances of direct crosses between the members of these two sections of Pelargoniums are to be found in *Achievement*, a variety having cherry-pink coloured flowers, and one extensively cultivated for bedding and market purposes; *Alliance*, with blush coloured flowers; and *Chingford Rose*, with rosy-pink blossoms. Several English cultivators appear to have raised varieties having a similar parentage as that of *Alliance*, and some of them were exhibited at the recent Holland Park Show.

The list of varieties of Ivy-leaved Pelargoniums in cultivation is an extensive one, and it is a difficult matter to make a selection, particularly as many are alike. The following with their colours are distinct, and amongst the best: *Beauty of Castle Hill*, soft rose; *Colonel Baden-Powell*, blush lilac; *Corden's Glory*, scarlet; *Galilée*, rich rose-pink; *Giroflée*, magenta-purple; *Hector Giacomelli*, pink, feathered with crimson; *Lamartine*, orange-scarlet; *Leopard*, lilac-pink, and blotched with crimson; *Murillo*, violet-crimson; *Princess Victoria*, pale lilac; *Resplendent*, crimson shaded with magenta (the flowers are very large); *Ryecroft Surprise*, pink; *Sabrina*, scarlet; *Souvenir de Charles Turner*, reddish-pink; *The Queen*, salmon-red. The purest of the white flowered varieties with which I am acquainted is *Merimée*, a novelty sent out by M. Lemoine some years ago; it is but little known. The petals are almost white, with dark featherings just at their bases. W.

AMPHICOME EMODI.

This Bignonaceous plant (see fig. 114) grows at high elevations in India. It was introduced to British gardens in 1852, and in the most sheltered positions in favoured localities it will succeed out-of-doors. Generally, however, the species is treated as a greenhouse plant, and it is very ornamental when cultivated in pots. The plants grow about 1½ feet high, the flowering stems producing rose-coloured flowers with a slight suffusion of orange. When the species was exhibited by Messrs. Jas. Veitch and Sons before the Floral Committee of the Royal Horticultural Society on June 25 last it was granted an Award of Merit. The specimen shown in the illustration is 18 months old from the seed.

amongst them if the returns are to show a profit. I am strongly of opinion that far more care and conscientiousness should be exercised by those persons who sell the crowns wholesale. If the flower is not present in the crown, no system of forcing can produce it, and growers and packers should be very careful to include only such crowns as from experience they can recognise as flowering crowns. I can generally select the crowns that will give good sprays of bloom, with stiff long stems. These I plant first, and the thinner and weaker crowns later by themselves; the contrast between the two grades is great. Some few years ago my practice was to force *Lily of the Valley* quickly at a high temperature, but I now grow them slowly in a moderate degree of warmth, for I find the results



[Photograph by C. P. Raffill.]

FIG. 114. — AMPHICOME EMODI: FLOWERS ROSE-COLOURED, MARKED WITH ORANGE.

MARKET GARDENING.

FORCING LILY OF THE VALLEY.

THE first point of importance in the forcing of *Lily of the Valley* is the quality of the crowns. When one orders a weekly consignment of, say, 2,500 of retarded crowns and pays full value for them, some little anxiety is felt as to the condition of the crowns when received, and also how many of second and even of third grade will be found amongst them. Retarded crowns of *Lily of the Valley* are very expensive, and their high price does not admit of any inferior crowns

are much better with less heat, the blooms being finer, the foliage darker and more robust, the stems stiffer, longer, and more erect. The crowns are placed in the forcing case, which is an enclosed cupboard under the staging. The cases are provided with evaporating pans, and have flow and return 4-inch pipes passing through them. The plants are kept in this dark cupboard until the flower-spikes appear well through the crowns, with a stem 2 to 3 inches long. At this stage the doors are opened during the night-time, but they are closed again in the morning. Damping or watering is afforded according to the condition of the pots or boxes.

in the matter of moisture. The flowers and the foliage under this treatment grow in strength and colour daily, and when the blooms are almost expanded the plants are removed from the cases and placed under lights on the stage above. The lights are opened slightly and the plants are shaded from bright sun-light. Growth quickly develops, and long-stemmed well-developed flowers are harvested from the best crowns, with foliage that can withstand the cold atmosphere in florists' shops, &c. I have often seen Lily of the Valley flowers droop and fade quickly when exposed for sale through being forced too hard and without being afterwards gradually inured to a colder atmosphere. Another point in favour of a moderate degree of heat in forcing this flower lies in the fact that less water is needed, for excessive waterings render the stems, foliage, and flowers soft and short-lived. Lily of the Valley flowers are always more or less expensive when out of season, and the short life engendered through hard forcing causes their sale to be greatly diminished. The carriage of a case of 2,500 crowns from London to the Midlands costs 7s. 4d., but the same number is conveyed from Hamburg for 5s. 5d., the weight of both cases being the same within a few pounds. This seems to me another striking illustration of how our railway officials hamper British trade by their strangely varying and apparently very unfair charges. The home grower is sufficiently handicapped by alien importations and competition, without receiving a further check from excessive railway charges. *Birmingham.*

POTATO TRIALS.

If Potato experiments are to be of much value they must be carried on for several years and the seed tubers of the different varieties planted must all be grown under the same conditions. These are the lines on which the Edinburgh and East of Scotland College of Agriculture has been working for a number of years. On Saturday, September 5, the final inspection for the season took place, when the second early and late varieties were inspected. There was a large and representative gathering of well-known agriculturists and a few prominent horticulturists. Mr. William Bruce, Director of County Work, conducted the party, there being also present Mr. James Wyllie, of Cockburnspath, convener of the County Work Committee and one of the directors of the college. The experiments embraced 70 plots, which had been planted to test the cropping qualities of the various varieties, the effects of spraying, artificial manuring, cut sets versus whole sets, and planting at different distances apart. A rather hurried inspection was made of a number of cooked dishes of tubers of the different sorts, but Mr. Bruce did not seem to attach much value to the results, as he thought such work would be much better done in the college buildings under better conditions and when more time could be given to it. The following is the official statement respecting the conditions under which the trials were made:—

"The Potatoes are grown in the ordinary course of the rotation on Pinkie Hill Farm, near Edinburgh, and the cultural treatment was the same as given to the farmer's crop.

Manuring for variety trials. 30 tons of short stable and byre dung, ploughed in during the winter; 6 cwt. of a special Potato manure. Analysis:—Amm., 4 to 5 per cent.; phosphate, 20 to 22 per cent.; sulph. potash, 10 to 11 per cent. In order to secure uniformity, the land was ridged and manure sown with a double-drill and manure-distributing machine.

I suggested to Mr. Bruce that his dressing

of farmyard manure was abnormal. His answer was that it was not of particularly good quality.

Seed.—The seed was grown on last year's trial plots, which were in the adjoining field. It was all carefully selected, counted and weighed by the college staff. The seed was planted at the rate of 20 cwt. per acre, or 56 lb. per full plot. The same number of sets was placed in each drill, which is exactly 1 pole, a full plot being 4 drills, or 1.40 acre. Most of the varieties have now been on trial for three years."

The produce of each plot was sorted out and placed on the ground in Potato boxes for the visitors to inspect. The ware was dressed over $1\frac{1}{2}$ -inch riddle, the seed over $1\frac{1}{4}$ inch; what passed through $1\frac{1}{4}$ inch was classed as chats, all diseased tubers being picked out as the dressing was done and placed by themselves.

II.—Experiment with Second Early Varieties (100 sets, 14 inches apart per drill).

Ware.	Yield in lbs. on 3 poles.				Total per acre.	
	Seed.	Chats.	Dis'd.	Tn.	ct.	lb.
(9) British Queen	201	144	15	40	9	10 53
(8) Dalmeny Radium	231	147	23	40	10	10 0
(10) Mand of Coil	240	83	71	12	9	11 101
(5) Johnston's Diamond	253	81	111	18	11	10 0
(13) Croft	195	72	64	16	8	5 80
(12) Rust Queen	165	162	21	39	9	4 32
(6) Evergold	249	189	—	42	11	8 64
(14) Eldorado	126	75	—	25	5	7 96
(9) British Queen	230	158	8	28	10	1 101
(duplicate plot)						
(8) Dalmeny Radium	224	137	11	36	9	14 32
(duplicate plot)						
(4) M. Meynisi	295	149	—	36	11	9 5
(7) Royal Kidney	261	126	—	39	10	4 32
(6) Dalmeny Aime	215	198	—	46	10	9 5
(1) The Cottar	346	108	3	21	11	17 16
(10) The Laird	291	97	9	15	9	16 21
(2) Niven's Premier	205	192	19	68	11	10 53

III.—Experiment with Maincrop or Late Varieties (100 sets, 14 inches apart per drill).

Ware.	Dressed yield per pole.				Total per acre.	
	Seed.	Chats.	Dis'd.	Tn.	ct.	lb.
Time Kidney	129	36	4	3	12	5 80
Time Kidney (whole sets)	110	29	5	1	10	7 14
Northern Star	88	31	7	1	9	1 47
Up-to-Date	113	45	7	3	12	0 0
Factor (cut sets)	155	23	3	2	14	10 0
Factor (whole sets)	152	45	5	4	14	14 32
Pink Blossom	133	37	5	3	12	14 32
Dalhousie	149	37	5	5	14	0 0
Table Talk	102	39	6	4	10	1 50
Dalmeny Hero	116	39	6	4	10	8 64
Dalmeny Beauty	162	36	6	2	10	8 64
Dalmeny Regent	133	33	4	4	11	14 32
Warrior	111	29	5	2	10	10 0
Triumph	107	35	5	6	10	18 64
Duchess of Cornwall	79	18	5	5	7	12 96
Mayfield Blossom	142	46	6	2	14	0 0
Heather Blossom	46	20	5	3	5	1 48
Scarlett's No. 2	73	29	5	3	7	17 16
Table Talk	78	38	6	2	8	17 16
Up-to-Date	91	47	8	3	10	12 96
Dalhousie	109	39	6	3	11	4 32
Langworthy	77	41	4	1	8	15 80
Peacemaker	62	35	7	—	7	8 64
What's Wanted	65	44	6	—	8	4 32

WHOLE VERSUS CUT SETS.

Mr. Bruce explained the plan adopted to secure a fair trial. Two-ounce whole sets were planted, and four-ounce sets cut longitudinally in two were planted as cut sets. This gave exactly the same weight of seed tubers per acre in each case. Mr. Bruce also pointed out that the produce of cut sets invariably gave a large proportion of ware tubers. I have always contended that this is one of the causes of Scotch seed being better than English seed. Scotch growers are, and have always been, given to planting cut seed, and my argument is that the resulting effect of persisting in this practice is in favour of heavier crops and larger tubers as against the planting of small sets. It must be remembered that cut seed is more suited for planting under the climatic conditions of Scotland than under those that obtain further south.

ARTIFICIAL MANURING.

Ten plots were set aside to test 10 different mixtures. The mixture recommended by the Board of Agriculture gave the best results last year, and this year the yield from the plot where it was applied is very near the top. The contents are as follow, and Mr. Bruce remarked that he considered it "a good all-round mixture." It is as follows:— $\frac{1}{2}$ cwt. sulphate of ammonia, $\frac{1}{2}$ cwt. nitrate of soda, 2 cwt. pure dissolved

bones, 2 cwt. superphosphate, $\frac{3}{4}$ cwt. muriate of potash (92 per cent.). I hope the college authorities will observe how the Potatoes grown with the different mixtures of artificial manures keep during the winter, and also what the tubers are like when cooked.

The outstanding feature of the trials was the care and thoroughness with which all the work was done. Duplicate plots to check the results of the first plots were grown, and even the produce of the different rows was weighed up separately in the manure experiments.

One thing that impressed me as a horticulturist was that quite a number of varieties which I knew gave excellent results in gardens were found to be of no use as croppers under field culture. A list of them is not given, but horticulturists will recognise among the sorts named above many which they know to be excellent as garden varieties, and therefore have the double qualification. Such work as this, being carried out by an authority so independent of all private interest in respective varieties of Potato and manure mixtures, is worthy of great encouragement.

I was informed that the secretary of the college or Mr. Bruce, whose addresses are 13, George Square, Edinburgh, will gladly send a copy of the full report when it is published—about Christmas—to anyone interested. *Wm. Cuthbertson.*

ORCHID NOTES AND CLEANINGS.

HEXISIA BIDENTATA.

An inflorescence of this rare and pretty scarlet-flowered Orchid is kindly sent by Mr. F. W. Moore, Royal Botanic Gardens, Glasnevin, Dublin, who has succeeded in establishing a rather weak specimen imported from Nicaragua in 1905. The plant bears jointed, slender pseudobulbs, the newer growths furnished with rather stiff linear, oblong leaves, and bearing short racemes of pale-scarlet flowers, with linear sepals and slightly shorter, ovate, acuminate lip, bearing at the base a chrome-yellow callus. The plant thrives best in an intermediate, or Cattleya house, in a shallow, teak-wood basket, or suspending Orchid pan.

EPIDENDRUM LAUCHEANUM.

This very attractive Epidendrum produces its flowers after the manner of the Platyclinis, it producing a thin, wiry, ascending stem 8 inches or so in height, and furnished with a drooping, many-flowered raceme about 10 inches long. The flowers are half-an-inch across; the sepals and petals are of a coppery orange shade, and the lip light yellow. The pedicel and the reverse side of the flower are tinged with purple. A fine inflorescence of this rare species is sent by Mr. F. W. Moore, Curator of the Royal Botanic Gardens, Dublin. *J. O'B.*

THE ROSARY.

ROSE PENELOPE.

In the *Journal of Horticulture of Australia* of April 1, 1907, this new Tea Rose, which originated from seed with Mr. John Williams, Broadwater Nurseries, Mount Gravett, Brisbane, is highly commended. It is described as being very free and constant in flowering, each bloom being carried singly on long stalks and furnished with prominent guard leaves. The bloom has good substance, is conical in shape, and solid. The base is of the colour of Francis Dubreuil—deep crimson—the centre cream coloured. The tints are a distinct break from any other Rose in commerce. The variety will be offered for sale this season. *F. M.*

VEGETABLES.

SCARLET EMPEROR RUNNER BEAN.

This Runner Bean is succeeding remarkably well this season. It bears most profusely, and the Beans are of good colour and flavour when cooked. It appears to be the best Runner Bean procurable. *W. A. Cook, Leonardslee Gardens, Sussex.*

PEA GOLDFINDER.

This is a first-class variety of culinary Pea, and plants of the true stock are difficult to excel for sturdiness of growth, freedom of cropping, excellence of flavour, and absolute immunity from mildew. It belongs to the marrow-fat type, and each pod is filled with about eight Peas, which are equal in edible quality to those of Veitch's Perfection. As a second early variety Goldfinder is useful, and continues cropping for an equally long period as the Ne Plus Ultra. It reaches a height of about 6 feet, but in a wet season it is often 7 feet in height. *E. M.*

The Week's Work.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq.,
Eastwell Park, Kent.

Humula coccinea. This graceful biennial being, as a rule, a favourite both for conservatory decoration and for use in the flower-garden, care should be taken to have a good stock of plants. If seeds were sown (as was advised in a previous Calendar) in the early part of the season, the plants should now be strong specimens in 6-inch pots. The roots being comparatively active all through the winter, the plants must not be allowed to become stunted or checked through remaining in a pot-bound condition. Therefore it will be necessary to repot them without delay into pots 8 inches or 9 inches in diameter. Use a potting compost consisting of good turfy loam three parts, leaf-soil one part, and manure from a spent mushroom-bed one part, adding sand and a 5-inch potful of soot to each barrow-load of the compost. Make the soil firm in potting, taking care not to bury the stem lower than it has been buried previously. Afford water with care during the winter, and keep the plants in a cool atmosphere; a suitable position at the present time being one in a frame having an ash-bottom, from which the frost can be excluded in severe weather. In such a place they will require very little attention until spring, when the plants, commencing to grow strongly, will require weak stimulants at regular intervals. To prevent Red Spider, employ the syringe freely during the growing season. Weak, clear soot-water is an excellent preventive. Vaporise the plants on the first appearance of green fly.

Hydrangeas.—Cuttings propagated in heat late in the summer, and potted on at once, will by now have become quite established, and should be kept in a cold frame during the winter, removing the lights on all favourable occasions. Where these are wanted in flower early in the season, it is a good plan to place a small batch into heat at intervals, a Vinery or Peach-house just started affording a very suitable place. These plants will form a succession which will last in bloom during the whole season, and be very acceptable for decorative purposes. Plants growing in small pots, and which are developing the flower-heads, will require manure-water at almost every alternate watering. They must at no time be allowed to suffer from want of water.

General work.—After the heavy rains experienced recently, the outside atmosphere has been much cooler, therefore it will be necessary to reduce the atmospheric moisture in all the plant-houses. Do not keep the houses closed or the atmosphere "stuffy," but by thoughtful attention to outside conditions endeavour to keep the temperatures even, and prevent cold draughts. Though but little fire-heat is necessary to keep the heat of the houses as high as is required, it is a good plan to have a little warmth in the water pipes, and ventilate accordingly, thus dispelling superfluous moisture. The atmospheric

temperatures at night may for the present range between 48° to 55° in the Carnation and cool plant houses, 58° to 63° in the intermediate house, and from 65° to 70° in the stove, allowing a rise of from 5° to 10° in each structure by sun-heat during the day.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow,
Cornwall.

The rock garden.—Where the heavy rains have beaten down the surface soil, making it so hard as to partially exclude the light, it should be lightly stirred with a pointed stick or a hand fork, taking care not to disturb any roots. Remove wind-blown leaves from the pockets. Many of the occupants of the Rockery are comparatively short-lived plants, and these species and varieties should be propagated, either by seeds or by cuttings, which latter may be rooted in pots to be wintered in frames. Any valuable or delicate plants about which there is any doubt as to whether they would safely pass through the winter, should be potted up and placed in a cold pit until next spring, when they may again be placed in the rock garden.

Tigridias.—The "Tiger Iris" is hardy in many warm, light soils, but in others it becomes necessary to lift the roots when the foliage has ripened, and store them for the winter in coconut fibre or dry sand. Some cultivators tie the roots by their stalks into small bunches, and suspend them in sheds for the winter, but under these conditions there is always a danger of them shrivelling. Tigridias seem to have lost favour of late years; perhaps on account of the evanescent nature of their flowers, which only last for one day, but good plants produce a wonderful succession of flowers, so that during the six weeks or so of their flowering season there is always plenty of blooms. Tigridia pavonia is the best known species; the variety Wheeleri has larger and brighter flowers; alba, flava, rosea, and grandiflora are other varieties sufficiently described by their names. T. canariense and T. speciosa are desirable species.

Arundo conspicua.—The plumes having now become of a shabby appearance, they should be removed. From June until a week or so ago the New Zealand Reed has shown marked superiority over the more common Pampas Grass, which has only just come into flower. Owing to this late flowering the plumes lose much of their attractiveness during wet weather, whereas the arched plumes of the Arundo are more loosely arranged and do not hold the water. In localities where its hardness is doubtful it will be well to give this and the Giant Reed (A. Donax) some protection for the winter.

Climbers.—Such climbing plants as Clematis, Wistaria, Ivy, Ampelopsis, &c., may well be planted at this season. As they will probably remain in the same position for many years the preparations should be thorough. Make the drainage perfect, and provide good soil varying in richness according to the need of the different species. Amongst the more recent introductions, Vitis Henryana and Actinidia chinensis are desirable plants. V. Henryana has prettily-marked leaves, and it requires a sunny position. Actinidia chinensis makes long, stout trailing growths, and very large, handsome leaves.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to LORD CLINTON, Bicton,
East Devon.

Root-pruning.—This is a necessary operation in instances of trees making rampant growth in order to bring them into a fruitful condition, especially if such trees have been established for many years, and it is considered to be unsafe to transplant them. For younger trees the latter operation is decidedly better, such removal checking at once the exuberant growth which young trees frequently exhibit for a few years after being budded or grafted. In the operation of root-pruning, before taking out the necessary trench, be careful to see if the soil is in a moist condition, and if it is not, apply a good watering and wait for a few days. If this precaution be not taken, it will probably be found that most of the soil will crumble away in reaching the stronger roots, and this would

cause the tree to suffer a greater check than desired. Take out a trench 4 feet from the base of the trunk, and afterwards gradually work away the soil towards the stem with a garden fork quite down to the drainage, preserving all fibrous roots, and tracing to their origin all thong-like fibreless roots which cause the excessive wood growth. Search well under the ball of soil, as these "robbers" often penetrate straight down into the sub-soil, and cut well back all such roots, making an upward sloping cut, so that the new roots that will be formed may be encouraged to grow towards the surface. Return the same soil to the trench, making it quite firm about the roots, and lay out evenly all roots, with the points trending upwards. If it is considered to be necessary, a few inches of fresh soil may be put on the surface as an encouragement to keep the roots there. Should the weather remain dry for long afterwards, it may be necessary to afford water to the trees thus treated. Extra large trees should only have half their roots interfered with this autumn, and the remainder may be done next year.

Prospective planters.—If convenient to the purchaser a visit should be made to a good nursery where he may select the trees for himself. I append a brief list of the different varieties of fruits found to be satisfactory generally. *Apples* (dessert): Beauty of Bath, Mr. Gladstone, Irish Peach, Langley Pippin, James Greive, King Harry, Ribston Pippin, Cox's Orange Pippin, Cockle's Pippin, Sturmer Pippin, Warwickshire Pippin, Allington Pippin, King's Acre Pippin, Charles Ross, Blenheim Pippin, Christmas Pearmain, Adams' Pearmain, Claygate Pearmain, Hornead Pearmain, Rival, Old and Scarlet Nonpareil, The Houlton, and Duke of Devonshire. *Culinary*: Potts' Seedling, Ecklinville Seedling, Lord Grosvenor, Lord Suffield, Peasgood's Nonsuch, Warner's King, Lane's Prince Albert, Bramley's Seedling, Alfriston, Annie Elizabeth, King of Tompkins County, and Newton Wonder. *Pears*: Beurré Gifford, Fondante d'Automne, William's Bon Chrétien, Louise Bonne of Jersey, Thompson's, Marie Louise, Beurré Bosc, Beurré Hardy, Beurré Superfin, Winter Nelis, Doyenné du Comice, Glou Morceau, Marie Benoist, and Olivier de Serres. *Peaches*: Amsden June, Hale's Early, Dymond, Royal George, Violette Hative, Princess of Wales, Goshawk, Late Devonian, Nectarine Peach, Gladstone, Sea Eagle, Barrington, and Dr. Hogg. *Nectarines*: Eldrige, Lord Napier, Early Rivers, and Humboldt. *Apricots*: Early Moorpark, Breda, Royal, Shipley's, Hemskirk, Moorpark and St. Ambrose. *Plums* (dessert): Old Greengage, Jefferson, Denniston's Superb, Coe's Golden Drop, Reine Claude de Bavay, and Late Orange. *Culinary*: Rivers' Early Prolific, Czar, Kirke's Victoria, Pond's Seedling, Magnum Bonum (white), and Monarch. *Cherries* (dessert): Frogmore Bigarreau, Napoleon Bigarreau, Black Tartarian, Black Eagle, Early Rivers, Governor Wood, Elton, Noble, and Florence. *Culinary*: Kentish Red and Morello.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE,
Bart., Burford, Surrey.

Cattleya labiata.—At the present time the autumn-flowering varieties of Cattleya labiata form one of the principal attractions in the Orchid houses, and if the atmosphere be kept a trifle drier than usual, the blooms will remain perfectly fresh for several weeks, a matter of considerable importance to those who grow the plants for obtaining flowers for cutting and for decorative purposes. When the plants have finished blooming, some of them will produce a quantity of young roots from the base of the flowering pseudo-bulbs, and at that stage the operation of repotting may be carried out if necessary. Following the flowering period, very careful watering will be necessary, whether the plants have been repotted or not, as the newly-made pseudo-bulbs (especially if they have not been sufficiently matured) are liable to decay if the roots are kept too moist.

Cattleya Bowringiana is another useful species which blooms at this season, and its richly-coloured flowers are most effective when seen by artificial light. This plant will require the same treatment as C. labiata.

Cattleya gigas, *C. Dowiana*, *C. D. aurea*, *C. Trianae*, and *C. Mendeli*.—Such species as these which have finished their growth should now receive just sufficient water to keep the pseudobulbs in a plump condition, and the leaves fresh, the object being to induce the plants to make fresh roots, but not any premature growth.

Cattleya Lawrenceana, being actively in growth, needs every encouragement. Elevate each plant well up to the roof glass, where it will be fully exposed to the light. This *Cattleya* needs copious supplies of water during the growing season, but no plant should be watered until the compost has become quite dry, and care should be taken to prevent any water lodging in the young growths. After growth is completed, keep the potting material on the dry side, but when the flower-buds commence to develop in the sheath, more water may be afforded.

Vanda Kimballiana is now in flower, and the blooms will last in good condition a long time if the plants are kept in a dry, well-ventilated position in the *Cattleya* house. A similar position should be afforded to plants of the pretty white *V. Watsonii*, which are now producing their flower-spikes. This species has some resemblance in its habit of growth to *V. Kimballiana*, and when well cultivated both plants are very floriferous.

Ansellia africana, *A. a. nilotica*, and *A. humilis*.—A light, sunny position in the *Cattleya* house is suitable for such plants as these, which, having commenced to grow, may now be repotted if this operation is necessary, but otherwise the roots should not be disturbed, as the plants thrive equally well when kept in a pot-bound condition, provided the compost is sweet and the plant has sufficient room wherein to make its growths. Avoid over-potting, and use the best fibrous loam obtainable, mixing plenty of small crocks with it, also a little coarse silver sand. Make the material firm about the roots, and in the same manner as one would pot an ordinary greenhouse plant. While growing and rooting freely, these plants require copious waterings whenever the compost becomes dry.

Oncidium papilio and *O. Kramerii*, now in bloom in the *Cattleya* house, always prove attractive to visitors. As is generally known, the flower-stems continue to produce a succession of flowers for a long period, and, if allowed to do this, the plants gradually become debilitated. In order to keep the plants in good health, it is advisable to remove the spike after it has produced two or three flowers.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq., Norwood, Alloa, Clackmannanshire.

Peaches and Nectarines.—Late crops of fruit now ripening will require fire-heat at this cold season of the year. It will be necessary also to maintain a good circulation of fresh air in the structure to induce the fruits to develop satisfactory colour, and the shoots of the trees to mature perfectly. Remove any leaves that would shade the fruit, and expose the latter fully to the sun's rays. Keep a sharp look-out for wasps, which are liable to cause damage in a short time if their presence is unobserved. If they are troublesome, paint the hot-water pipes with sulphur mixed in water. If new borders are to be made up or fresh trees planted, October is the best month for doing such work. Lift and transplant at once young trees that have shown a tendency towards grossness of growth, for this is best done before the leaves drop from the trees. Before re-planting these gross-growing trees, they should be root-pruned. The compost for supplying the rooting-medium should consist of chopped turfy loam, with a liberal addition of lime-rubble and wood-ashes. To every five loads of this compost add 1 cwt. of a chemical vine manure (coarse grade). Do not in any case introduce farmyard manures, which would cause the trees to grow gross, and become liable to "gumming." New Peach borders should be made up in the same manner as I recommended for vines in the Calendar of last week. A border of a width of 3 or 4 feet inside is ample for a period of two or three years. Compost can be added to such borders as the roots extend. Peach and Nectarine trees, from which all the fruit was gathered early in the season, should be frequently syringed until

the leaves fall, especially if they have been attacked by red spider. Admit plenty of air, and keep the atmosphere as cool as possible after it is found that the wood is well ripened. Until the wood is well ripened or matured, fire-heat must be used in conjunction with free ventilation. Thin out all shoots that will not be required for fruiting next year, especially the thickest shoots. Be careful not to allow Peach borders to become dry any time throughout the period of rest, as this is a frequent cause of bud-dropping in spring.

Strawberries.—Plants in pots may be allowed to remain in their present position until the end of the present month if the weather is favourable, as they should now be well rooted, and at the end of the month should possess well-developed crowns. But in the case of continued heavy rains or severe frost, the plants must be removed to unheated pits or frames, or be afforded protection out-of-doors by placing glass lights over them. If frames are available, they may be placed in their winter quarters at once. If the plants cannot be protected from heavy rains, turn the pots on their sides, it being harmful to allow the roots to remain saturated with water. They may also, if desired, be stacked up on their sides, keeping the crowns outwards.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

Turfing.—The present being the best time of the year at which to lay turf, all bowling greens, tennis courts, or croquet grounds requiring renovation should be seen to without delay.

New bowling greens.—The formation of new bowling greens should also be proceeded with immediately, in order that the turf may be down in time to be well joined together by the beginning of May, when play usually commences. There are various methods of constructing bowling greens, the choice of which largely depends upon the sum of money available for the purpose, as the cost varies from about £80 to £300 per green. In some parks bowling greens are laid with a little more care only than is bestowed upon the formation of a good lawn. The main guiding levels only are gauged with a spirit level, the intermediate turves being merely beaten down to the main ones and tested with a straight-edge. A green of this description will no doubt satisfy beginners, but once a person becomes proficient at the game, he is not so easily satisfied, and requires a green as near perfection as possible, to obtain which a very different method of construction and turfing must be adopted.

The Glasgow bowling greens.—Glasgow undoubtedly possesses some of the best public bowling greens in Great Britain, and they are equal in every respect to the finest of private greens. They are, in the first place, formed upon the most approved principles, and afterwards maintained in the best possible manner. The Chief of the Glasgow Parks Department has very decided views upon this question, and rightly thinks that where the public pays directly for its amusement—as in the case of bowls, &c.—it is entitled to enjoy the sport under as favourable conditions as obtain in a private club. When visiting Glasgow a year ago I was so impressed with the appearance of these greens that Mr. Whitton very kindly supplied me with a plan and specification, from which we have constructed one of the best of our public greens in the city of Cardiff. Scotch greens measure 126 feet by 126 feet, with a 12-inch deep ditch on the four sides, and, unlike the Lancashire Crown greens, are perfectly level. The one great aim in forming these playing lawns is perfection of drainage. The whole area is therefore treated in such a manner as to enable water to pass quickly from it. In the ditch 4-inch land tiles are laid, into which 2½-inch pipes—placed in rows at 9 feet apart—discharge any water that may fall on the surface or rise from the subsoil. The further construction as adopted is as follows:—When the site is levelled and drained it is covered to a depth of 4 inches with rough ballast, which is made quite stable by a heavy rolling. A layer of coarse ashes 3½ inches in thickness is then placed over the ballast, and, after being consolidated by means of a roller, is, in turn, covered with 3 inches of fine ashes.

After this third layer is thoroughly rolled, an inch of fine sand is added, upon which the turves, each 1½ inch thick, are laid and beaten to the desired level. These turves, when cut, are 12 inches square and 2 inches in thickness. Before being laid they are placed, grass downwards, into a wooden mould, 12 inches by 12 inches by 1½ inch deep, and well beaten with a wooden mallet, after which, by the aid of a scythe blade, the superfluous soil is cut away, leaving the turf exactly 1½ inch thick. This process is adopted so as to ensure every turf being solid and of an uniform thickness—attributes they could not possibly possess if cut and laid in an ordinary manner. The turfing is done diagonally across the green, and each turf is tested with the spirit level and beaten down to the correct position as the laying proceeds. It will be noticed that no soil other than that in the turf itself is used, hence, while the grass cannot grow luxuriantly, it needs careful attention to prevent it from being injured from a want of moisture.

Selection of turf.—Although the proper construction of a green is a most vital point in determining its success, the kind of turf used is equally important. However well drained, or however well supplied with conveniences for watering, a green may prove a failure if the turf used is not suitable. Good mountain or seaside turf, composed of fine grasses, growing in a light, sandy soil, is generally regarded as the best for this purpose.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq., Cobham Park, Surrey.

Cauliflowers.—Continue to prick out young seedlings obtained from successional sowings. The earliest plants should be large enough for planting into their winter quarters by the end of the present month or early in November. The ground for these should be thoroughly and deeply worked, for Cauliflowers require rich ground and the best cultivation. The labour expended in this way will be well and surely repaid next spring in the superior produce obtained.

Early Potatoes.—Tubers that have been treated according to previous directions will now be making satisfactory progress. Further plantings of tubers that are well rooted and have started into growth, in boxes, should now be made either in pots or in frames, the latter for preference if frames are available that can be heated. Another selection of tubers should now be put into boxes containing leaf-soil, that they may also be started into root action and growth, so that as more frames become vacant, another even "plant" may be carried out.

Late Peas.—The present season has been a most favourable one for late Peas, but by the present date the supply will, in nearly all cases, be finished, and the haulm should therefore be cleared off the ground. Where it is customary to sow Peas in the autumn for early spring supply, the seeds should in all cases be sown during the next fortnight, choosing a warm, sheltered position, and where a little protection can be given during the most severe weather. Regarding varieties, it will be best to choose the dwarf-growing sorts, such as Little Marvel, Green Gem, &c. Such varieties, if sown now out-of-doors, may be expected to come into use before those which are sown in pots in the New Year. The latter will afterwards be planted out in the open as soon as the weather will permit, and the crop so raised will follow soon afterwards, and thus form a very valuable succession.

Seakale.—Examine the beds of Seakale; remove all the leaves which are showing signs of decay. This done, the crowns will be the better exposed to the influences of the weather and early frosts, which will serve to "ripen" the crowns and bring them into such a condition that they will quickly start into growth presently, after they have been removed into a heated atmosphere.

Turnips.—The roots, which are already of a serviceable size, may now be lifted and stored, for they will thus keep in better condition than if they were left longer in the ground at this season. The latest Turnips will still be making growth, and should be left in the ground for some time to come.

EDITORIAL NOTICE.

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Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

APPOINTMENTS FOR THE ENSUING WEEK.

FRIDAY, OCTOBER 25—Royal Bot. Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—48°1'.

ACTUAL TEMPERATURES:—LONDON.—Wednesday, October 16 (6 P.M.): Max. 54°; Min. 43°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, October 17 (10 A.M.): Bar. 29.1, Temp. 55°, Weather—Overcast.

PROVINCES.—Wednesday, October 16 (6 P.M.): Max. 55°, Yarmouth; Min. 41°, Scotland N.

SALES FOR THE ENSUING WEEK.

MONDAY—

Nursery Stock at the Nurseries, Eynsford, Kent, by order of Messrs. H. Cannell & Sons, by Protheroe & Morris, at 11.

MONDAY AND WEDNESDAY—

Sale of Dutch Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY TO FRIDAY—

Dutch Bulbs at 67 & 63, Cheapside, E.C., by Protheroe & Morris, at 10.30.

TUESDAY—

Nursery Stock, at Rose Nurseries, Derby Road, Beeston, Notts., by order of Mr. W. Lowe, by Protheroe & Morris, at 12.30.

WEDNESDAY—

Nursery Stock, at the Nurseries, West Wickham, Kent, by order of Mr. J. R. Box, by Protheroe & Morris, at 11.30.

THURSDAY AND FRIDAY—

Thirty-third Annual Sale of Nursery Stock at Hollamby's Nurseries, Groombridge, near Tunbridge Wells, by Protheroe & Morris, at 11.30.

The Cambridge Lodge collection of Orchids, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Exhibiting Chrysanthemums.

The letter published on this subject in our last issue from a valued correspondent again raises the question of the utility of show boards at the floral exhibitions. For many years past we have advocated the disuse of the boards, and have besought the exhibition authorities to devise more suitable means for the display of their flowers. During a long period our appeals appeared to avail little; the custom had been practised in the case of every floral society, and it was thought by those most concerned to be inseparable from exhibitions which, being competitive, needed to be judged with the greatest possible accuracy. This could only be done, it was said, by displaying the blooms in the show boards, and, therefore, divesting them of all the natural foliage of the plant, and hiding the stems quite out of view. In the case of Carnations, even this treatment was considered to be insufficient to bring the blooms into a proper condition for inspection, and, therefore, each was provided with a paper collar on which the petals might rest flatly and ineffectively, even white flowers being placed on white paper. Our view is, and has always been, that, in order that floral exhibitions shall afford a means of instruction and pleasure to the public, it is necessary that the flowers shall be displayed in a manner as attractive as possible, and particularly in a manner that the public may be expected to employ them for their own purposes. The flowers that are capable of

attracting most notice under these conditions will be likely to be also the most satisfactory to the purchasers. Furthermore, a natural method of display should increase the attractiveness of the exhibition itself. Latterly, these views have obtained many converts, and the results have been particularly marked at the exhibitions of the National Rose Society, the National Chrysanthemum Society, the National Dahlia Society, and the two Carnation societies, all of which have provided some classes, at least, in which flowers might be shown in a decorative manner.

We rejoice that such a change has taken place in the views of those responsible for arranging the various shows, and from this point of view cannot but regard the suggestion now put forward as being of a retrogressive character.

If, however, the letter from our correspondent be read carefully, we believe it will be seen that the complaint is based as much upon the present alleged mismanagement of the "vase" classes, as upon a desire to revert to the system that has been discarded. He writes of "inartistic green jars," the "frequently bad arrangement on the part of the exhibitor himself, and the crowding together of the jars by the exhibition officials," &c. These are matters that might easily be remedied, and doubtless would be improved upon after longer experience with this method of exhibition. In regard to the question of variety in form and colour, it would appear to us that there seldom lacks sufficient variety at the shows, and a class which serves to point out to the visitor which are the very best forms of a particular type certainly serves a useful purpose. If the "vase" classes have the result of placing before the public only the largest and coarsest flowers, the fault may be traced to the judges, for exhibitors may be trusted to display those possessing the characteristics which judges on previous occasions have singled out for awards, and the prizes could be just as well awarded for rich and bright colours, and for refinement in the flowers when exhibited in vases, as they could be if the flowers were inserted in boards.

We think, therefore, that the objections raised by our correspondent are worthy the careful attention of those whose duty it will be to compile future schedules, and where it can be proved the new system at present fails to fulfil conditions which appear desirable in the interests of the flower, the public, or the exhibitors themselves, efforts should be made to so modify the schedule as to meet the legitimate objections that are raised, and at the same time to preserve the more natural method of display.

British Rainfall.

Rain, or more frequently the deficient supply of it, is a question of so much importance to the horticulturist that the appearance of a publication which deals exhaustively with the fall of rain, and its distribution over the United Kingdom in the previous year, should be an event of no little importance to all interested in the welfare of their gardens. In the volume before us, entitled *British Rainfall for 1906*, by Dr. H. R. Mill, records for that year from no fewer than 4,300 rain-gauges are tabulated and discussed from various points of view.

It is surprising to find how these records vary not only in different parts of the country, but even within the limits of a single county. Take, for instance, a county of moderate size, and with few hills of any importance, like Berkshire, where last year the difference between the driest and wettest rainfall stations amounted to as much as 10 inches, or nearly half the total fall of the driest of those stations. Glancing down the column which gives the heights of the different places above sea-level, it will be noticed that, as a rule, the higher the locality the greater the fall of rain. If, however, we turn to the records of a hilly county like Derbyshire, we shall find the differences in the amount of rain measured in the lower and the elevated districts still more striking. There the smallest quantities in 1906 fell at places less than 200 feet above ordnance datum, whereas at the highest station, which is situated near Buxton and 1,600 feet above sea-level, the total record amounted to as much as 57 inches, or more than double that at any of those at the lowest levels in the county, where the total falls for the year were under 24 inches. Great as are these differences, the above figures represent them only approximately at their true extent, for it is well known to meteorologists that the more windy the position in which a rain-gauge is placed the smaller is the proportion of the actual rainfall it collects owing to the eddies of air in anything like high winds which form about the mouth of the gauge and prevent the full quantity of rain from entering it. For those who would like to pursue this question further it may be pointed out that an interesting article on the influences of the wind on rain-gauges will be found in the volume under review.

During the six months ending March, 1906, or what may be termed the winter half of the year, the rainfall over the British Isles was, as a rule, slightly in defect of the average. This we gather from a summary of the rainfall of "the winter six months." The particulars given under that heading, however, more concern the engineer than the gardener. But for the six summer months there is no such summary, and therefore the required information in respect to that period can only be obtained by gleaning it from the descriptions of the individual months. This omission would seem to imply that the author is of opinion that a brief review of the rainfall, and its distribution over the six months in question, would have no particular interest for his readers, whereas to those engaged in agricultural and horticultural pursuits they must necessarily be of special interest.

From the descriptions of the various months we gather that April was dry in all parts of the kingdom, and that, taking England alone, the total fall was only half the average. May, on the contrary, proved relatively the wettest month of the year in the British Isles, the heaviest rainfall occurring in Scotland and the north of England. June was everywhere very dry until the end of the month, when heavy falls of rain took place in some districts. July was the driest month of the whole year in England, with a slight excess of rain throughout the western half of Scotland and Ireland. August was another dry month, and more particularly in



SYRINGA JOSIKÆA EXIMIA, AS SHOWN BY SIR TREVOR LAWRENCE, BART., AT THE
R.H.S. MEETING ON JUNE 11. COLOUR OF FLOWERS, REDDISH-ROSE.

the south-east of England, with an excess of rainfall in Scotland and Ireland. Taking the country as a whole, September proved exceptionally dry. From the foregoing particulars it will be seen that during nearly the whole of the growing period of the year the weather remained in nearly all parts of the country singularly dry.

What, however, made the summer months of last year, by which is meant throughout this article the six months ending September, so distressing to vegetation, was not only the continued dryness of the ground, but also the continued dryness of the air, the latter being to most plants the more trying of the two conditions. The want of moisture in the atmosphere is clearly shown by the unusual evaporation from Dr. Mills' evaporation gauge at Camden Square in the north of London, which was greater than the average for the previous 21 years in every month of the growing period, except May. In fact, the evaporation in August had only once before been exceeded in that month, and in September never before.

We have had, at all events in the home counties, a long and almost unbroken series of dry summers, including that of the present year, and have therefore become so well acquainted with the evils of drought that we have come to regard rain as an unmixed blessing, but should the conditions change and wet summers be the rule rather than the exception, we may find reason to modify our views. As the truth is said to lie half way between the two extremes, so summers of seasonable rainfall will be found in the long run those most to be desired. For rain is only a perfect blessing when accompanied by, at all events, moderately high temperatures. Unfortunately in this country dry summers are, as a rule, also characterised by excessive warmth and dryness of the air, whereas wet summers are almost invariably not only moist, but cold as well.

OUR SUPPLEMENTARY ILLUSTRATION shows the very fine variety of Lilac displayed by Sir Trevor Lawrence, Bart. (gr. Mr. BAIN), under the name *Syringa Josikæa eximia*, at the meeting of the Royal Horticultural Society on June 11 last, when it was granted an Award of Merit by the Floral Committee. The inflorescence of reddish-rose coloured flowers is very large and strongly scented. The variety flowers when most other Lilacs have passed out of flower, and is therefore the more valuable.

SMALL HOLDINGS.—We are informed that Earl Carrington, K.G., President of the Board of Agriculture and Fisheries, has appointed Messrs. Edwin John Cheney and Matthew Talbot Baines to be small Holdings Commissioners for the purposes of the Small Holdings and Allotment Acts, 1907.

IVY KILLED BY A POPLAR.—The Ivy is so well known on account of its destructive effects upon the trees infested by it that an example in which the tables were completely turned is of some interest. A writer in *Le Bambou* describes a Canadian Poplar which was enveloped by a very large Ivy, the stem of which had grown across a deep furrow near the base of the supporting tree. The edges of the furrow slowly grew towards each other, and in this way the climber was finally enclosed and strangled. After its death and ultimate removal, the signs of the damage caused to the tree, of course, disappeared.

FRENCH NATIONAL CHRYSANTHEMUM SOCIETY.—The Annual Show and Congress of this Society will take place at Toulouse from November 5 to 7. The agenda comprises the following subjects for discussion: The production of Chrysanthemum seed, spring flowering of Chrysanthemums, manures for outdoor culture, insects and diseases, best modes of packing cut blooms and plants, uses of Chrysanthemums for decoration of gardens and apartments, sports, how to secure and fix them. Medals will be awarded for the best papers on these subjects. The floral committee will meet on October 15 and 26 and November 5 and 16.

FRUIT - PRESERVING.—The Home Secretary has, in pursuance of Sections 41 and 58 of the Factory and Workshop Act, 1901, issued statutory rules and orders for factories and workshops, in which women and young persons are employed in the process of cleaning or preparing fruit. These special rules are concerned with the sanitary and hygienic conditions which are to be observed in the work-rooms, the hours of work of women and young persons, and the keeping of a register by the occupiers of fruit-preserving factories. Several of the rules are not to take effect till June 1, 1908.

HELPS FOR THE SEED TRADE.—*The Weekly Florists' Review*, under the foregoing headline, tells its readers what agricultural exploration work, when carried out by experienced men, has done for the country. The results achieved by Mr. A. Carleton in securing grains from Russia and other parts of the world for use in the U.S.A. was mentioned at the Seed Trade Convention at New York last month, as an illustration of the importance of sending practical men upon explorations of this nature. Mr. Carleton has made grains a special study for 20 years, and he was able to select varieties of Wheat which produced last year in the U.S. about 50,000,000 bushels, worth about 37,000,000 dollars. Particular attention was called to the Japanese salad plant Udo, which is cultivated and served much like Celery, and is proving a promising plant for use in American households. About 5,000,000 dollars worth of matting is imported annually, and the Department of Agriculture is trying to establish the manufacture of matting from Japanese grass, which grows readily in the U.S.A. As the types of Juncus employed do not come true from seed, it has been necessary to secure a large shipment of these plants from Japan, and they are now in successful cultivation in California. Machinery has been perfected for weaving this grass, and by its aid one person can make in a day as much as an Oriental can make in 30 days.

A PÆONY CHECK LIST.—Most of the special societies in England and America appear to be busy in preparing for the use of their members literature of the subject under their special charge. The publication now under notice appears to be the first official catalogue of Pæonies, and is due in a large measure, though not altogether, to the American Pæony Society. The book, a substantial brochure in paper wrappers of 232 pages, has been prepared by John Eliot Cori, and contains the names of the leading varieties of Pæonies of which authentic descriptions can be found. After a few pages of introductory matter, in which the intent and scope of the catalogue are set forth, and in which also the system of alphabetical classification is explained, the reader will find a list of something like 2,706 varieties, arranged alphabetically, and accompanied by necessary details of information. First appears the name, then the section, raiser, date, and reference to other authorities who have catalogued or described the Pæony. The publication bears no indication of price, and it has probably been prepared only for the use of members of the society.

CANADIAN FRUIT.—According to the Crop Bulletin 95 of the Ontario Department of Agriculture, the yield of Wheat and fruit in this province of Canada is below the average. The problems of disease are more acute than with us; thus black knot is said to be steadily killing out the Cherry trees, whilst the dread San José scale insect, which has spread from California, is working havoc amongst the orchard trees in some of the districts.

ASPARAGUS DAMAGED BY CATERPILLARS.—Mr. F. H. Chittenden, entomologist in charge of breeding experiments under the U.S. Department of Agriculture, gives an account of two moths, the caterpillars of which are causing damage to Asparagus and other crops. One of the species, the Cranbury Spanworm (*Cleora pampinaria*), has long been known on the Cranberry plants, and the caterpillar belongs to the class of "loopers" or "geometers." It attacks many other plants besides the two mentioned above. The striped garden caterpillar (*Mamestra legitima*) is also a general feeder, but is said to be specially partial to Asparagus, as well as to leguminous and cruciferous vegetables. Its distribution is more southern than the former species, which is common in Massachusetts.

EUPHORBIAS (POINSETTIAS) ON BENCHES.—Gardeners in this country do not seem to have adopted the American bench method of growing Euphorbia (Poinsettia) pulcherrima; but if the plant is cultivated for producing bracts for cutting only, it may be carried out at less cost than pot culture. The species is a surface-rooting plant, and in order to prepare the young plants for planting on the benches, it is essential to set out the cuttings in trenches 4 inches deep, having a layer of coarse sand or fine gravel at the bottom, upon which the cuttings will rest. If the benches are not ready when the cuttings are fit for lifting, they should be put into cutting-boxes until they are required at the end of the season. As the wood ripens, water must be gradually withheld, so that by the time it is quite matured the bracts will be of full size and fading, whilst the leaves will have fallen, and the soil be quite dry.

ANOTHER PHYLLOXERA REGULATION.—The Italian Government obliges exporters of Italian-grown Grapes to pack the fruit in close boxes or baskets. There are, it is stated, isolated centres of infection in Italy from which the insect can easily be exported to places abroad, and this circumstance may become the cause of a conflict between the Italian and German Customs authorities, for the Italian export firms obstinately refuse to agree to the new regulations, owing to the increase in the cost of packing. It may be stated that instead of there being a few isolated centres of infection in Italy, there are thousands of such, and millions of vines are or must be destroyed. It is a matter for surprise that the German Government should be so apprehensive of the Phylloxera being imported. Thousands of the insects enter the country in late autumn in packages of fresh Grapes, and the new regulations will do nothing to stop them. Hence it is immaterial whether the fruit be sent in closed boxes or baskets, or after the manner hitherto employed. The winged insect comes over the frontiers without disturbance, hidden securely between the berries. The potted plants, trees and shrubs, which come mostly from places in which neither vines nor Phylloxera exist go, as is well known, through a close and costly examination, usually to the inevitable injury of the plants; but the packages of Grapes go through and are never examined. The utter futility of regulations against the spread of this pest of the vines has often been pointed out in the *Gardeners' Chronicle* and other publications, but apparently with no effects in certain quarters abroad.

ANCHUSA ITALICA "DROPMORE VARIETY."

THIS well-known Boraginaceous species was introduced from the Caucasus nearly a century ago, and it has since been cultivated very commonly in British gardens. Its value as a hardy flowering plant has depended to a considerable extent upon the colour of the flowers, for there is usually a deficiency of blue in the herbaceous borders during summer and early in autumn. The Dropmore variety, which originated at Dropmore, in Berkshire, several years ago, by its splendid qualities has caused the species to be given a better place generally in gardens than it possessed formerly. In habit and rich colouring, as well as in the size of the individual flowers, the variety

Unfortunately, the raisers of Chrysanthemums are not careful to keep records of the crosses made; when new varieties are first exhibited, they are awarded according to merit as "sports from"—or "seedlings from"—such and such a variety, and the male parent is often overlooked. There is a desire on the part of the Chrysanthemum specialist to introduce early "singles," and so to extend the flowering season; there is a growing demand for varieties of this section in the London markets. The variety "Nonin's Single" is one of the best of the early singles having a large yellow flower. Two seedlings have been raised from this variety by Messrs. Cragg, Harrison, and Cragg, of Hounslow, namely, Mrs. H. W. Cowley and Mr. A. K. Bowstead; both are white, the former having slightly reflexed and

which have been awarded the First-Class Certificate by the N.C.S.), but also on account of their great diversity in colour.

Uncertain as the results of crosses are—yet those obtained from the crossing of "sports" are even less reliable—there seems to be a tendency, when using a "sport" for a parent, for the offspring to revert to the variety from which the "sport" has arisen. A good example has been noted in the Japanese section. "Mme. Carnot," crossed with "Charles Davis" (the latter being the male parent), gave a cross of a deep mauve or amaranth, resembling "Vivian Morell," from which "Charles Davis" had sported. In such instances the "sport" appears to represent a superficial change, incapable of being transmitted sexually. *Herbert Cowley.*



FIG. 115.—ANCHUSA ITALICA "DROPMORE VARIETY": FLOWERS BLUE.

[Photograph by C. P. Raffill.]

greatly excels the type. It is, therefore, not unusual now to find *Anchusa italica* given a large bed to itself, as is the case in the instance shown in the illustration at fig. 115, where the wealth of flowers upon the plants and on the ground afford sufficient proof of the effect such a mass of blue would have in the landscape. *Anchusas* require a rich, porous soil, and should be cultivated in a position that is exposed to the sun.

CROSS-FERTILISATION OF CHRYSANTHEMUMS.

No one can have the same interest in the results of cross-fertilisation as the specialist who, it may be, has spent years endeavouring to introduce new varieties and to bring about improvements in his own speciality. To him it is particularly interesting to observe the varieties around him of his own raising, and, what is more, to see before him a field for new work.

curled petals. Both flower outside in early September, and next season they will be introduced.

The results of crossing among the singles seem to show how impossible it is to conform this work to any law. The following is a list of varieties obtained from the same cross:—

	COLOUR.	
Beauty of Weybridge ..	Terra cotta crimson	Edith
Lizzy	Crushed straw-berry	P'agram (pink)
Crown of Gold ..	Old gold	×
Evelyn	Amaranth	Annie
Eva P'agram ..	Blush pink, white ring	Farina (terra cotta red).
Elizabeth Phyllis ..	Cerise	
Willie	Dark pink	
Dan	Pink, fine petal	

This cross was made by Mr. W. C. P'agram, of Weybridge. It is noteworthy, since it not only gave rise to such high-class varieties (three of

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

CHRYSANTHEMUMS: BOARDS V. VASES.—

Mr. Davis, on page 269, calls attention to the lack of interest in Chrysanthemums, and attributes this to the introduction of the vases. Much as we admire vase exhibits, it is beyond dispute that this method of exhibiting has done nothing to promote the cultivation of Chrysanthemums. The vases alone are not responsible for the waning interest in these plants. The large blooms of the Japanese varieties and the constant flow of interesting novelties have been the cause of the wonderful interest which has been taken in Chrysanthemums. Consider the vast number of provincial exhibitions which are held during the month of November. Practically the whole of these shows are due to the culture of the Japanese Chrysanthemum. Hardy fruits, especially Apples and Pears, would have stood a poor chance of being

seen at their best had it not been for these much abused "mop heads" of Chrysanthemums. No one can deny the fact that the public do not attend the autumn shows in the same numbers as in days gone by, neither are fanciers of the Chrysanthemum to be found in the same numbers. Mr. Davis seems to deprecate the extraneous influences given to some shows, and with these includes popular military bands. Possibly we should "stick to our last," but experience generally proves that good music pays, and if a good "gate" cannot be obtained without it, by all means let the band be employed. The Scottish Society pays between £300 and £400 for music alone during the three days of its November show, and its "gate" alone is worth between £1,100 and £1,200. Would it be as much as half this amount without the band? I think not. Would Shrewsbury have done so much for horticulture without "outside" attractions? Returning to our text, "Boards v. Vases," it has been my fortune, either as an exhibitor (non-competitive) or judge, to have attended most of the important autumn exhibitions, and my experience is that half-a-dozen blooms in a vase do not attract growers as they will on the formal board. The chief objections to vases are:—The heavy expense incurred in packing and transit to the shows; the curtailment of the number of varieties and the larger number in each which has to be grown. Many may consider a reduction in the number of sorts to be advantageous, but, nevertheless, there is something to be said on the other side. Growers cannot afford space and time to cultivate varieties with the chance of having only a bloom or two of each. They must grow a large number of kinds which have already been seen, and may be exhibited, even at the risk of repetition, in the various classes. Whilst I contend that the large exhibition Japanese Chrysanthemums constitute the life of the show, I wish it to be clearly understood that I do not regard mere size as the acme of perfection. Far from it; but no one can deny the fact that most judges place this character before anything else, and it is this which has to a certain extent brought the large flowers into disrepute. Judges write against size, but when they award the prizes, dull-coloured, coarse, and sometimes stale flowers are preferred to slightly smaller, clearly-coloured, handsome, fresh flowers. Twice last season I had to meet a committee and explain why the large, coarse, poorly-coloured, and stale flowers were not placed first. My suggestion was that if size is to be the only standard of excellence it should be so stated in the schedule, and then have a carpenter with his 2-foot rule to award the prizes. I would like to suggest that the National Chrysanthemum Society call a conference of growers to discuss boards v. vases and also the question of "How to increase the popularity of the Chrysanthemum." *W. J. Godfrey.*

UNION OF GARDENERS' SOCIETIES. The step taken by the Council of the Royal Horticultural Society in forming a union of the various Horticultural Mutual Improvement Societies will, I am assured, meet with universal approval. On behalf of the Croydon Society, who were the originators of this union, I appeal to other societies to join at once, and thus show their approval of the scheme. During October, 1906, a provisional committee was appointed to formulate a plan for federating these Mutual Improvement Societies, but after considerable and careful deliberation, it was decided to approach the Royal Horticultural Society, and to ask them to take the matter up. This suggestion the premier Society has been good enough to adopt. Such recognition will, I trust, act as a stimulus to the many Mutual Improvement Societies throughout the country, and tend to create fresh endeavours in these bodies for the betterment of horticulture. *Harry Boshier, Hon. Sec. to the Provisional Committee, 62, High Street, Croydon.*

—It must be gratifying to the members of the many Gardeners' Mutual Improvement Societies in this country to learn that the President and Council of the Royal Horticultural Society have decided to form a union of such bodies. The Gardeners' Debating Societies must have a beneficial effect upon gardening in general, and have become important factors in British horticulture; there is

it is appropriate that the premier horticultural society should link together the numerous Gardeners' Mutual Improvement Associations that exist in the various parts of the country. From such a union nothing but good can accrue, and if no more is accomplished than an annual conference of delegates the work will not have been in vain. *W. P. Board (Chairman, Redhill and Reigate Gardeners' Mutual Improvement Society), Gatton Park Gardens, Reigate.*

AMERICAN BLIGHT ON APPLE TREE ROOTS.—*A Working Grower* (p. 357) has had but limited experience in hardy fruit culture or he would not write in so light a strain respecting the attacks of American Blight on the roots of Apple trees, and the efforts made by nurserymen to keep the pest in check. I am familiar with the best nurseries in the United Kingdom, and I do not know one where the utmost care is not adopted to ensure clean stock. Purchasers are, however, sometimes tempted by cheap offers, and beginners are especially liable to make this mistake, with the result that they often obtain a good deal more than they expected or desired. If *A Working Grower* is ever so unfortunate as to have his trees badly attacked at the roots, he will sympathise with other growers who have had to destroy whole plantations on that account. I have known nurserymen who have, through this pest, had to give up valuable pieces of land at a heavy loss because all efforts had failed to clear their stock of the blight sufficiently to enable them to give the necessary assurance to customers. Methylated spirits should be used with great caution—it is certainly "penetrating," and has killed many a young tree when employed without due care. Petroleum and soft soap is the safest effectual mixture I have tried, but more depends upon the thoroughness of the application and the watchfulness exercised. *R.*

QUICK GROWTH OF GLADIOLUS.—The late most season has been so favourable to the growth of Gladiolus, that from a plant raised from seed sown on March 2, we have to-day cut a fine spike of bloom. The seed was saved from mixed varieties of *G. gandavensis*, and was not of the new *G. præcox* type. It should, in fairness, be said that the soil was specially prepared, so that the seedlings had plenty of assistance. Other spikes of bloom are now forming in the same bed. We never saw seedlings looking better. *Pipley, Bitton, Bristol, Oct. 5.*

THE EUROPEAN GOOSEBERRY - MILDEW ATTACKING THE RED CURRANT.—The European Gooseberry-mildew (*Microsphaera grossulariæ*, Wallr., Lev.) has again attacked the Red Currant this season, as it did last autumn. In October last I reported this mildew as occurring on some Red Currant bushes in the College plantations, and pointed out that up till then this Gooseberry-mildew had apparently never been observed on this plant. This season the same lot of Red Currant bushes in the College plantations have been attacked by the mildew, and I have observed it in Red Currant plantations in two other localities in Kent, viz., not far from Linton, near Maidstone, and in the vicinity of Sittingbourne. In both cases the growers had never previously observed any mildew on the bushes. Has any grower elsewhere noticed any mildew on Red Currant leaves? It must be remembered that the American Gooseberry-mildew (*Sphaerotheca mors-uvæ*, Schwein. Berk.) is able to attack the Red Currant; and I have seen bushes this summer in Norfolk which were attacked by this mildew. *E. S. Simon, F.R.S., Mycologist to the South-Eastern Agricultural College, Wye, Kent.*

TWO GOOD SENECIOS.—*S. Clivorum* still (October 6) makes a brilliant patch of orange; its large flowers and handsome leaves have been effective for several weeks. It is suitable either for the large border or for planting in wilder surroundings, but it never appears better than when in grass at the waterside. Indeed it prefers a moist position, as the leaves are apt to flug when the roots are in dry soil. Much less robust in habit is *S. pulcher*, whose large red-purple flowers are amongst the last to appear in the autumn weather. It should be given a place in a sunny, sheltered border composed of light, well-drained soil. This plant is of the easiest culture, but being slightly tender should be protected in winter with a covering of ashes placed over the roots unless growing in a sheltered position. *Harold Evans, Llanishan, Cardiff.*

LAW NOTE.

CARRIAGE OF PRODUCE BY RAILWAY.

At the Brentford County Court on October 11, before His Honour Judge Howland Roberts, the Great Western Railway Company sued Fredk. Thomas, of Lelant, Cornwall, and Kew Bridge Market, for £33 14s. 9d., carriage of goods. The claim was admitted, and a counter-claim of £62 11s. was set up for loss of market value on vegetables and flowers through late delivery by the railway company. Mr. Hume appeared for the Company, and Mr. Jarvis for the defendant.

On the counter-claim plaintiff stated that he was in the habit of having vegetables and cut flowers sent up from Cornwall by the Great Western Railway. He made arrangements with the Brentford stationmaster that all goods arriving were to be delivered by six o'clock on market mornings at Kew Bridge. On March 28 a consignment of Broccoli arrived late and he lost the best customers at the market. He estimated that he lost £35. On March 30, thirty dozen of cut flowers were five hours late in delivery and had to be sold at a loss, and on several other dates in April the goods arrived late. On one occasion there was a delay of two days. When he spoke to the stationmaster he was advised to sell the stuff as best he could. The market served a very large district, being the only one westward of Covent Garden. It opened at five o'clock in the morning, and the best customers were there from 6 till 7.30. Unless goods were on sale between these hours the best prices could not be obtained, and they had to be sold to second-rate buyers.

Cross-examined: Some of the goods were sent at special rates, others at ordinary rates. He did not complain of delay on the line in transit, but of delay in sending from the station after arrival.

Mr. Hume submitted that there was no liability against the Company. Some of these goods were carried at the ordinary rate, and were delivered in the ordinary way. Others were carried at a special rate to ensure quicker transit, but the Company were protected by a condition on the back of the note signed by the consignee that they would not be responsible for the loss of market value in consequence of non-delivery.

His Honour pointed out that the case here was that they were not delivered to a specified time.

Mr. Hume replied that the Company carried according to their conditions. Any arrangement made by a stationmaster, or directions given by a pointsman, were outside the conditions. Unless the goods were damaged they were saleable and the Company would not be liable. There was no unreasonable delay and no proof of wilful misconduct. Even in the absence of the special condition the loss of market value was too remote, and there was no proof of the actual market price and the price at which the goods were sold.

Mr. Jarvis argued that the clause in the conditions was unreasonable and must be governed by certain conditions as to the nature of the article. It had been held that the non-delivery of cloth, so that it missed the fashion, was a wrongful act which carried damages. Here the goods were Broccoli and cut flowers, both of which perished rapidly, particularly the flowers, and if not sold in market hours they would be useless, since they could not be kept till the next market day. There was no question of delay on the line, but the defendants had declined to send out in reasonable time goods received at their destination station, and from that they should be liable. There were penalties in common law resting upon them as common carriers, and they could not contract themselves out of them. They were in this instance monopolists. Theirs was the only system by which the plaintiff could get his goods to the market, and by insisting on such a clause they were crippling business.

His Honour said that the ruling case on railway carrying was *Moore v. The Midland Railway*, and he had failed to see anything in this case which put the plaintiff outside it. Undoubtedly the goods were delivered late, and then came the question, was the Company protected by their contract? He thought the clause was framed to meet just such a contingency as this, and to protect the Company against claims where goods carried by them were only an hour or two late. The plaintiff was well aware of the clause, and he did his business with the Company knowing his own risk of loss. No statements or arrangement by the stationmaster could override the written contract. As to the goods carried at ordinary risks they were sent at owner's risk, and there was no proof of wilful misconduct on the plaintiff's part. He therefore found for the Company with costs.

SOCIETIES.

ROYAL HORTICULTURAL.

OCTOBER 15.—The usual fortnightly meeting of the Committees of this society took place on Tuesday last in the Royal Horticultural Hall, Vincent Square, Westminster.

The ORCHID COMMITTEE recommended two First-Class Certificates and three Awards of Merit to novelties in the Orchid exhibits; the FLORAL COMMITTEE one First-Class Certificate and five Awards of Merit to novelties amongst other plants and flowers; and the FRUIT AND VEGETABLE COMMITTEE Awards of Merit to two varieties of Potato. At the afternoon meeting a lecture on "British Floral Relationships with Foreign Countries" was delivered by Prof. Geo. Henslow, M.A.

Floral Committee.

Present: W. Marshall, Esq. (chairman), and Messrs. C. T. Druery, H. B. May, Jno. Green, T. W. Turner, George Nicholson, James Walker, George Gordon, H. J. Cutbush, R. Hooper Pearson, W. T. Ware, J. F. McLeod, W. Howe, J. Jennings, C. Blick, H. J. Jones, W. Cuthbertson, C. Dixon, C. E. Pearson, J. T. Bennett-Poe, C. E. Shea, W. P. Thomson, E. H. Jenkins, W. J. James, George Paul, and G. Reuthe.

Messrs. H. B. MAY & SON, Upper Edmonton, London, N., staged a representative collection of species and varieties of *Adiantum*. This exhibit, which was displayed in a semi-circular manner on the floor, showed the remarkable diversity of form seen in the members of this genus of Ferns. The foliage in some was very finely divided and delicately poised on slender petioles, others had stiff fronds with pinnules of large size, and still others, as in *A. asarifolium*, had simple foliage; in the species named the leaves were represented by large kidney-shaped lobes. *A. peruvianum* has big lobes, 2 inches or more across their widest parts, but in this species they are pinnate. *A. macrophyllum albo-striatum* has its leaves marked with white and rose colour. *A. ciliatum* has once-divided leaves, similar to a species of *Nephrolepis*. Other interesting plants observed were *A. tenerum* Farleyense, *A. trapeziforme*, *A. undulatum*, and *A. micropinnulum*. Adjoining the Ferns was another exhibit from this firm that was composed of Carnations, Veronicas, and Bouvardias. (Silver Flora Medal.)

C. F. RAPHAEL, Esq., Potter's Park, Shenley (gr. Mr. A. Grubb), displayed blooms of varieties of Carnations of the *Souvenir de la Malmaison* type. The blooms represented the very highest standard of culture. (Silver Flora Medal.)

Messrs. J. CHEAL & SONS, Crawley, Sussex, exhibited a very handsome and large exhibit of ornamental-leaved and berried shrubs and trees. The group occupied the whole of a long table at the platform end of the hall, and was arranged with skill. Varieties of Maples were especially handsome in their autumnal tintings, some, such as *Acer tataricum* Ginnale, *A. japonicum* laciniatum, and *A. dasycarpum* pulverulentum, had deep-red coloured foliage. *Catalpa Bungei* aurea had big, cordate leaves of a beautiful gold colour. Another shrub with foliage of this colour is *Virgilina lutea*, the leaves being pinnate. *Nandina domestica* resembles in its leafage a plant of *Aralia*, and this was shown in splendid colour—a shade of red. *Ampelopsis hederacea* and other species were prominent in their autumn tints, rivalling the beautiful Cornuses, such as *C. mas* elegantissima, *C. Spathii*, *C. sibirica*, and others in their shades of colouring. Oaks, *Cratægus*, *Berberis*, Peaches, Azalias, Arbutus, and many others added much beauty to this extensive display. (Silver-Gilt Flora Medal.)

A group of trees and shrubs, including many ornamental Conifers, was displayed by Messrs. H. LANE & SON, Great Berkhamsted. Golden Yews, Cupressus *Macrocarpa*, *Picea* [Abies] *polita*, *Cryptomeria elegans*, *Cedrus atlantica* *glauca*, *Retinospora obtusa* aurea, *Abies Douglasii*, *Retinospora squarrosa*, Cupressus *Lawsoniana* in variety, and many others were shown in well-cultivated specimens.

Mr. L. R. RUSSELL, Richmond, Surrey, showed ornamental shrubs, many in berry. *Pernettyas*, *Skimmias*, *Aucubas*, *Cotoneasters*, *Cratægus*, *Veronicas*, *Clematis*, &c., were the

principal subjects, and these were in small pots of a size suitable for the embellishment of dwelling rooms. (Bronze Flora Medal.)

Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, showed their rich collection of *Nepenthes*, as beautiful as in former seasons. This unrivalled collection was greatly admired, and the culture of the plants left little to be desired. Some of the specimens were carrying as many as twenty well-developed pitchers, *N. mixta sanguinea* and *N. Burkei* excellens having this number. Among the handsomest was the variety named after Sir W. T. Thiselton-Dyer, the long pitchers being splashed with red on a yellowish ground, and with a broad, handsome rim. *N. Curtisii* *superba* has narrow, dark-coloured pitchers. Those of *N. Mastersiana* are broad and red. *N. Chelsonii* has a very long lamina, and at the end of the long midrib is a broad pitcher, beautifully marked with red, and with broad wings. The pitcher of *N. ventricosa* has a constricted centre, and is very pale green or yellow. There were also *N. Tiveyi*, *N. Ruby* (new), and many others. Adjoining were greenhouse flowering plants, including a specimen of *Æschynanthus grandiflorus* in flower; *Begonias*, *Streptocarpus*, *Angelonia grandiflora*, &c. In another part of the building Messrs. VEITCH displayed a group of trees and shrubs in fruit, including *Pernettyas*, *Skimmia Fortunei*, *Cotoneasters*, amongst which was the tall *C. frigida* with its panicles of showy red berries, and the dwarf *C. uniflora*; *Symphoricarpos mollis*, *Aucuba japonica* *nana*, in tiny specimens, *Hypericum Androsæmum*, and *Cratægus Syracantha Lelandii*, the last-named the most beautiful of all. (Gold Medal.)

Chrysanthemums of high merit were shown by Mr. H. J. JONES, Hither Green, Lewisham, and Keston, Kent. Vases of the variety Mrs. A. T. Miller were very fine in every respect, the handsome receptacles used for their accommodation being filled with 18 or more blooms of this large white Japanese variety. There were also good vases of W. Beadle, Money-maker, Mrs. W. Knox, Mrs. A. H. Lee, George Terry, and other choice kinds. These, with vases of decorative varieties, completed the group. (Silver-Gilt Flora Medal.)

Messrs. JOHN PEED & SON, West Norwood, staged a semi-circular group of Chrysanthemums, in which were big blooms of Japanese varieties above a setting of smaller decorative varieties, with Palms, Codiaums, Dracænas, and Ferns as relief. On a table opposite the Chrysanthemums Messrs. PEED staged flowers of tuberous-rooting *Begonias* in boxes, each of separate colours.

Messrs. W. WELLS & CO., Merstham, Surrey, arranged a group of Chrysanthemums with much skill. The back of the exhibit contained tall groups of such varieties as Golden Queen of the Earlies, Mrs. A. Thomson (a bright yellow flower of the decorative type), *Roi des Blanches*, &c. In the centre of the group was a stand arranged with the pink flowers of the variety *Lillie*, and at the base of this was the new white *La Cygne*, which received an Award at the recent show of the National Chrysanthemum Society. Some large blooms were also displayed, including those named after Mrs. R. Hooper Pearson, Miss M. Godfrey, Mdle. S. Gauthier, Mrs. W. Wells, &c. (Silver Banksian Medal.)

Mr. ERIC SUCH, Maidenhead, exhibited Chrysanthemums principally of the border or decorative type, and several hardy flowers, amongst which was a beautiful new *Solidago*. (See Awards.) (Silver Flora Medal.)

Mr. G. REUTHE, Keston, Kent, exhibited choice hardy and Alpine plants. (Silver Banksian Medal.)

Messrs. T. S. WARE, LTD., Ware's Nursery, Feltham, Middlesex, showed flowers of single varieties of the Pæony-flowered Dahlias, Chrysanthemums of the decorative type, and perennial Asters in great variety.

Messrs. R. & G. CUTHBERT, Southgate, displayed a large number of flower-spikes of *Lilium tigrinum* *Fortunei*, set off with tall shoots of *Phalaris arundinaria*. (Bronze Flora Medal.)

Messrs. WM. CUTBUSH & SON, Highgate, London, showed an assortment of seasonal flowers from the herbaceous border, principally varieties of Aster, *Solidago*, *Pentstemon*, *Scabiosa*, *Pyrethrum*, *Phlox*, *Pernettya*, &c. The display was staged with good artistic effect. (Silver Flora Medal.)

Messrs. BARR & SONS, King Street, Covent Garden, London, W.C., showed hardy flowers, including perennial Asters, decorative Chrysanthemums, *Gladioli*, *Kniphofias*, *Crocuses*, *Phyllis Franchetii*, &c.

Mr. FRANK BRAZIER, Caterham, showed, in a decorative manner, an exhibit of border Asters and small-flowered Chrysanthemums. Bamboo epergnes were used extensively for their display, with dwafers vases between these. (Silver Flora Medal.)

Messrs. G. & A. CLARK, LTD., Dover, Kent, showed, among a collection of hardy flowers, some splendid spikes of the snow-white *Cimicifuga simplex*. *Pennisetum longistylum* is an ornamental grass, suitable for mingling with cut flowers. (Bronze Flora Medal.)

Messrs. R. VEITCH & SONS, Exeter, displayed specimens of *Mutisia decurrens*, *Dendromecon rigidum*, and *Gilia coronopifolia*.

Messrs. W. BULL & SONS, King's Road, Chelsea, London, again exhibited ornamental-leaved stove and greenhouse plants as a setting to a group of Orchids.

AWARDS.

FIRST-CLASS CERTIFICATE.

Berberis Wilsonæ.—This is a new species introduced from Central China. The branches are thickly clothed with narrow leaves, generally less than $\frac{1}{2}$ -inch long. The reddish spines are in some cases twice as long as the leaves. The berries are bright red, or the red of a Bigarreau Cherry, except towards the base, where they develop but little colour. The flowers are described as of rich yellow, and the collector has stated that in China the leaves develop even richer colouring than the berries. This characteristic, however, is not yet apparent in this country. From Messrs. JAMES VEITCH & SONS.

AWARDS OF MERIT.

Aster Miss Southall.—This is a variety of the perennial Asters or Michaelmas Daisies. It belongs to the Nova Angliæ group and has lilac-coloured flowers about $1\frac{1}{2}$ to 2 inches across. It is the best in this section of this colour. Shown by Mr. DAVIES, Ross-on-Wye.

Chrysanthemum Esme Reed.—This is a white sport from the variety Mrs. Winkfield, and, like the type, is considered valuable for its dwarf habit and capacity for blooming freely whilst the roots are confined in pots as small as 5 inches or 6 inches in diameter. It is said to be impossible to grow either variety into tall plants. Shown by Mr. P. LADDS, Swanley.

Chrysanthemum H. J. Jones 1908.—This is a variety belonging to the large-flowered yellow Japanese-incurred section. The florets are very broad and the colour rich. We think better flowers than those exhibited will be forthcoming at a later date. Shown by Mr. H. J. JONES.

Nepenthes \times *Ruby* (*N. sanguinea* \times *N. Curtisii* *superba*).—This plant has very broad pitchers, each about 9 inches in length and 4 inches in breadth. The colouring is a shade of red, as is indicated in the name. The wings are small, but the rim is finely developed. The plant had very robust leaves, and four excellent pitchers. Shown by Messrs. JAMES VEITCH & SONS, LTD.

Solidago "Golden Wings".—This is described as a seedling form of the common "Golden Rod," but its appearance would hardly lead one to such a conclusion. It is an excellent garden plant, for the inflorescences are not erect, as most *Solidagos* are, but spread almost horizontally or feather-like, and are extremely effective when seen from above. The colour is rich yellow. Shown by Mr. E. F. SUCH, Maidenhead.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair); and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshaw, W. Bolton, W. Cobb, H. Little, W. Boxall, E. Ashworth, A. A. McBean, F. Sander, H. T. Pitt, H. J. Chapman, W. P. Bound, H. G. Alexander, H. A. Tracy, F. J. Hanbury, R. Brooman-White, F. W. Moore, H. Ballantine, A. Dye, W. A. Bilney, R. G. Thwaites, and G. F. Moore.

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr. Mr. Jas. Hudson), was awarded a Silver Flora Medal for an exhibit of finely-flowered Orchids. In the back of the

group were well-cultivated examples of *Cattleya Bowringiana* and on either side specimens of its hybrids, C. Mrs. J. W. Whiteley and C. John Baguley. The front portion of the display contained good forms of *C. labiata*. At one end was an arrangement of *Vanda carolea*, *Oncidium varicosum*, and *Odontoglossum grande*, and at the other a selection of the white *Dendrobium formosum giganteum* and *Oncidium varicosum*.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, secured a Silver Flora Medal for an excellent group of Orchids, in which were two new *Lælio-Cattleyas* named L.-C. Lusitania (C. Iris × L.-C. Phryne) and L.-C. Aureole (L.-C. luminosa × C. Iris). Of the better-known kinds were varieties of L.-C. luminosa, L.-C. Dominiana; a very fine form of L.-C. Cappel, having rich, reddish-scarlet-coloured flowers with a maroon-coloured lip; and other showy hybrid *Lælias* and *Cattleyas*. Among the *Odontoglossums* and hybrids of this genus was the pretty O. Phoebe. *Rodriguezia fragans* was shown with a wealth of white flowers; we also noticed the true *Cynoches Egertonianum* with a raceme of claret-coloured blooms, the curiously-fringed *Cirrhopetalum ornatissimum*, *Bifrenaria aureofulva*, *Maxillaria nigrescens*; the new and distinct *Dendrobium regium*, a good example of the pure, white-lipped *Odontoglossum bictoniense album*, and a selection of fine varieties of *Cattleya labiata*.

Messrs. SANDER & SONS, St. Albans, were voted a Silver Flora Medal for an effective group in which were several fine varieties of *Cattleya labiata*, the best of which—*C. labiata* King Edward VII.—is a noble flower of fine proportions and of much substance. The flowers were a shade of magenta-rose; the broad labellum ruby-purple, with orange colour in the throat. Another fine *Cattleya* shown in this exhibit was C. Lord Rothschild variety Rex, a variety bearing a resemblance to a fine C. Hardyana, but with dark orange in the lip, which in form resembles that of *Cattleya labiata*. Other choice plants noted were the rare *Cymbidium lancifolium*, the new and handsome C. erythrostylis, *Catasetum tridentatum*, several distinct forms of *Cypripedium insigne*, and various hybrids.

Messrs. JAS. VEITCH & SONS, King's Road, Chelsea, were awarded a Silver Flora Medal for a group containing many showy hybrid *Lælio-Cattleyas*, including varieties of L.-C. Nysa, L.-C. Blethleyensis, L.-C. Haroldiana, &c. Also *Cattleya Mantinii*, *Masdevallia Imogen*, M. Acis and the fine orange-scarlet M. Veitchiana grandiflora, which is still the most beautiful of its class. In the centre was a specimen of *Odontoglossum grande* carrying 24 flowers, and around it a selection of *Cattleya labiata*; *Cypripedium insigne* Sanderæ; the distinct Veitchian hybrids C. Baron Schröder, C. Little Gem, C. H. Ballantine, and C. Jas. H. Veitch; *Odontoglossums*, &c.

NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr. Mr. H. J. Chapman), received a Silver Banksian Medal for an interesting group, in which were several hybrids raised from seeds obtained by crossing albinos, the progeny being invariably coloured varieties. In the group were the fine *Cypripedium Dom Carlos Rex*, with large white flowers blotched with purple; the distinct C. Chapmanii, "Oakwood variety," which differs from the type plant in having a yellowish ground colour to the flower; C. Io-Argus, an attractive flower with large blackish blotches on the petals; C. Nandii, Low's variety (see Awards); the pretty, pale yellow *Lælia* De Geestean, Oakwood variety, and a fine plant of *Odontoglossum crispum punctatissimum* with two spikes, the one having 14 and the other 19 well-developed flowers.

Messrs. J. & A. A. McBEAN, Cooksbridge, secured a Silver Banksian Medal for a neat group containing *Cattleya aurea*, *Odontoglossum crispum*, O. Pescatorei, *Miltonia vexillaria*, M. Roelzii, *Cypripedium insigne* Sanderæ with six flowers, and other showy Orchids. The best hybrid in this group was *Cypripedium Alportense*, Gratrix's variety (insigne Harefield Hall × Boxallii), a large flower, of perfect form and with the marking of C. insigne, but on a softer ground colour.

Messrs. MOORE, LTD., Rawdon, Leeds, secured a Silver Banksian Medal for a group in which were several hybrid *Odontoglossums*; *Cypripedium insigne maculatum*, C. insigne nigrum, and C. insigne, Green Bank variety, the last-named is a very distinct flower, and has

attractive markings. Other plants noted in the group were *Lælia majalis*, *Cattleya Iris*, C. Bowringiana superba, some pretty varieties of *Cypripedium Fairrianum*, *Brasso-Cattleya Madame Hye*, a light-coloured variety of *Dendrobium Phalaenopsis*, the singular *Nanodes Medusæ*, *Oncidium bicallosum*, &c.

Messrs. STANLEY & Co., Southgate, received a Silver Banksian Medal for a group containing excellent varieties of *Cattleya labiata*, *Oncidium varicosum*, yellow varieties of *Cypripedium insigne*, C. Leeanaum, and the dark-coloured C. nigratum (Swinburnei magnificum × Argus Moensii).

Messrs. HUGH LOW & Co., Enfield, Middlesex, were awarded a Silver Banksian Medal for a group in which were good examples of *Cattleya labiata*, including one of the white variety Empress; also *Lælio-Cattleya Firefly*, *Cattleya Pittiana*, C. Maronii, *Cypripedium Milo*, Westonbirt variety, C. Olivia, C. triumphans, C. Maudiae magnificum, *Cattleya Gaskelliana alba*, &c.

Messrs. JAS. CYPHER & SONS, Cheltenham, staged a group in which were varieties of *Cattleya labiata*, a fine pan of the rare white *Zygopetalum rostratum*, some excellent varieties of *Cypripedium insigne*, including The Queen, Commander-in-Chief, Ernestii, and Oddity. C. × Kitty, a very good flower; C. Milo, Westonbirt variety, of very dark colour; C. Niobe, a selection of C. Fairrianum, &c.

The Earl of ONSLOW, Clandon Park, Guildford (gr. Mr. Blake), showed a spike of *Cattleya labiata* with six flowers.

H. J. BROMLOW, Esq., Rann Lea, Rannhill, Lancashire, sent *Cypripedium Actæus revoluta* and C. insigne, Rann Lea variety.

J. FORSTER ALCOCK, Esq., Northchurch, Herts, displayed a seedling between *Cypripedium Harrisianum superbum* and C. Charlesworthii, in which the lower sepals were veined with rose as well as in the dorsal sepal.

HENRY LITTLE, Esq., Baronshalt, Twickenham (gr. Mr. Howard), showed *Cypripedium Winnifred Little*, a pleasing yellow flower with a purple line on the dorsal sepals and petals.

Messrs. LINDEN & Co., Brussels, showed *Odontoglossum crispum* Madame Linden secundum, a good flower, heavily blotched with claret red, and O. c. Reve d'Or, white, blotched with yellowish-brown.

J. BRADSHAW, Esq., The Grange, Southgate (gr. Mr. G. G. Whitelegge), sent *Cattleya* Mrs. J. W. Whiteley var. Regalis, a very large flower of fine shape and of a bright purplish-rose colour, the lip being deep ruby-crimson.

Messrs. ARMSTRONG & BROWN, Tunbridge Wells, showed the singular *Bulbophyllum Dayanum* with a short inflorescence of four blooms, the segments of which are fringed, and a small white-flowered *Dendrobium*.

G. W. JESSOP, Esq., Rawdon, Leeds, sent a small form of *Cirrhopetalum appendiculatum*.

AWARDS.

FIRST-CLASS CERTIFICATE.

Arachnanthe Rohaniana (*Renanthera Rohaniana* Rehb. f. and R. Hookeriana), from J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis). A very remarkable plant, with flowers resembling those of *Arachnanthe Lowii*, but very distinct in growth, its broad, slightly ascending leaves being not curved downward, as in A. Lowii. The inflorescence bore three large yellow basal flowers, each slightly spotted with brown; beyond these the stout pubescent stem was naked for about 9 inches. The remainder of the inflorescence carried twenty cream-white flowers, heavily barred with deep red blotches. In describing this plant (which was originally in the collection of Prince Camille de Rohan), in Xenia I., p. 89, the characters relied on to distinguish A. Rohaniana is "Epichilii aristula retrorsa; carinula inflexa simplex" as opposed to duplex in the description of A. Lowii.

Cattleya Hardyana, "Westbirt variety," from Major G. L. HOLFORD, C.V.O., C.I.E., Westonbirt, Tetbury (gr. Mr. H. G. Alexander). A superb form raised at Westonbirt. The flowers have a white ground colour that is veined and tinged with bright rose, the white showing between the reticulation of colour. The flower measured 8 inches across; the rich ruby-crimson and gold-coloured lip 3 inches.

AWARDS OF MERIT.

Cattleya labiata "Papine," from J. BRADSHAW, Esq., The Grange, Southgate. A charming pure white variety, with a small violet-coloured blotch in front of the yellow disc of the lip.

Cattleya Armstrongia magnifica (Hardyana × *Lodigesi revoluta*), from Messrs. ARMSTRONG & BROWN, Tunbridge Wells. The variety is the most beautiful of the section which has yet appeared; the finely-formed flowers being of a bright magenta rose, the labellum deep orange, changing to chrome yellow, and with a rose ray on the front.

Cypripedium Nandii, Low's variety (*callosum* × *Tanzianum*), from NORMAN C. COOKSON, Esq., Oakwood, Wylam, Northumberland (gr. Mr. H. J. Chapman). The flowers are of medium size, and white, delicately tinged with rose.

Fruit and Vegetable Committee.

Present: Joseph Cheal, Esq. (in the Chair); and Messrs. W. Crump, W. J. Jefferies, Alex. Dean, John Basham, H. Parr, J. Davies, H. Somers Rivers, G. Reynolds, P. C. M. Veitch, Jesse Willard, J. Jaques, J. McIndoe, Owen Thomas, C. G. A. Nix, and W. Poupert.

Several seedling fruits and vegetables were presented for Awards, including a white-fleshed Melon of good flavour, and to which an Award of Merit was proposed, but, as this was not included in the trial of these fruits at Wisley Gardens, this summer, the Award was not confirmed.

Messrs. DOBBIE & Co., Rothesay N.B., and Mark's Tey, showed a collection of Onions in about 70 varieties. Rarely has the Hall contained a finer exhibit of this vegetable, all the samples being solid, clear-skinned and evenly matched. They were all sown on the same date.

March 2 and a card on each variety indicated the date of harvesting, which, in the majority of cases, was October. The seeds were obtained from British, French, German, Italian, Dutch and American sources. Thus the display was very representative, and had much educational value. The variety from which the heaviest weight of bulbs resulted was the well-known Ailsa Craig, and another heavy cropper is Cranston's Excelsior. The best keeping varieties were Bedfordshire Champion, Golden Globe, Dobbie's Main Crop, and James Keeping. Red varieties were numerous, and these are recommended for their extreme hardness: good red Onions are Deep Blood Red, Dobbie's Selected Red, and Saint Marie. The small Silver Skinned Pickling Onion was shown, and other kinds deserving of mention are Rousham Park Hero, Perfection, Dobbie's Champion, and International. (Silver-Gilt Knightian Medal.)

Very large collections of Potatoes were shown by Messrs. GEO. MASSEY & SONS, Spalding, Lincolnshire (Silver Banksian Medal), and Miss M. H. DODGE, Losely Park, Guildford (gr. Mr. Steward). (Silver-Gilt Knightian Medal.) In each instance about 100 varieties were displayed.

Mr. W. H. BARBER, Culham Court, Henley, was awarded a Silver Banksian Medal for an exhibit of Onions, and a Bronze Banksian Medal was granted to R. H. COMYNS, Esq., Heath Farm House, Watford (gr. Mr. Waterton), for an exhibit of 100 excellent Onions of the Ailsa Craig type.

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, showed a collection of Apples, the most pleasing being those of Bismarck, Allington Pippin, Bramley's Seedling, Lord Derby, Lane's Prince Albert, Cellini, Wealthy, Tyler's Kernel, Potts' Seedling, and Stirling Castle. (Silver Banksian Medal.)

AWARDS OF MERIT.

Potato The Provost and Longkeeper.—These two varieties having satisfied the Committee in a cultural trial with other kinds at Wisley, and having afterwards passed a culinary test, were each granted an Award of Merit. The Provost was sent by Messrs. DOBBIE & Co.; Longkeeper by Messrs. CARTER & Co.

POTATOS, &c., AT WISLEY.

A meeting of the members of the Fruit and Vegetable Committee was held at Wisley on the 8th inst. Mr. J. Cheal was chairman, and a full quorum attended. Late Potatoes were inspected first, the varieties Up-to-Date and Factor both

yielding fine crops, and stocks had their previous awards confirmed. The following varieties were given 3 marks, to be followed by Awards of Merit if satisfactory in passing the cooking test at Vincent Square:—Forester, Long Keeper, The Provost, and Kirke's No. 3 Seedling, a name for which is to be obtained. These were all white varieties, and partook very much of the "Up-to-Date" or the "Abundance" type. Scottish Triumph, synonymous with Up-to-Date, gave the finest stock. Good crops were also furnished by the varieties Conquering Hero, Duchess of Cornwall, and a few others, but these were not selected by the Committee for cooking.

It is greatly hoped that the Potato trial next year will be one of testing the growth of tubers from diverse soils and climates. The mere growing of varieties as now conducted has little or no educational value. Some 70 rows of spring-sown Onions, all pulled and lying on their sides were next inspected. These would have given better results if they had been duly thinned, but the desire seemed to be to test the plants' bulbing powers just as sown. The best red Onion was Crimson Globe, certificated in 1888 as Southport Red Globe, and the best of brown varieties were Ailsa Craig, Cranston's Excelsior, Banbury Cross, and Nuneham Park. An Award of Merit was made to Excelsior, that variety not having previously been thus honoured. There were numerous duplicate rows of varieties, the stocks coming from divers seedsmen.

A large breadth of Tomatos, in 66 assumed varieties were somewhat of a surprise, as outdoor Tomatos have generally done so badly this season. Most of the plants were heavily fruited, though the fruits were green. There was not much disease, but very many fruits were uneven in form, and had no market value. Probably the best fruits, none being large, but the crop a heavy one, was Carter's Sunrise, which promises in good seasons to be as fine for outdoor culture as it is indoors. An Award of Merit was made to Up-to-Date, also a heavy cropper.

A good stock of "Exquisite" Parsley was seen, but as there were no other varieties by to compare it with, the Committee advised that a trial of Parsleys take place next year.

On such sandy soil, a trial of winter-sown Onions under glass, the plants put out in April, would no doubt prove very successful.

There is a remarkably fine trial of Celeries to be seen later. The sand seems to suit Celery admirably.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

OCTOBER 2.—Committee present: Messrs. E. Ashworth, Cypher, Ashton, Ward, Sander, Keeling, Stevens, Cowan, Walmsley, P. Smith, and Weathers (hon. secretary).

Messrs. CYPHER & SONS, Cheltenham, staged a very interesting group of plants, one of the main features of which were about 100 plants of *Cypripedium Fairrieanum* in flower. *Dendrobium radium* in Messrs. Cypher's group obtained a First Class Certificate. (Silver Medal.)

W. THOMPSON, Esq., Stone, Staffs (gr. Mr. Stevens) was again a prominent competitor in the section for *Cypripediums*. In addition to a collection of these plants, this gentleman showed a glorious plant of *Oncidium incurvum* var. *album*, with a wealth of its handsome white flowers: the plant was voted a Cultural Certificate. In the same group *Cypripedium* × *Waltonense* was shown; its parentage is unknown, but evidently it is a secondary hybrid in which *C.* × *Antigone* has effected some influence: an award of a First Class Certificate was made to this plant. (Bronze Medal.)

J. MACARTNEY, Esq., Bolton (gr. Mr. Holmes) was represented by a collection of clean, well-grown plants. *Cattleya* × *Iris* Hey House Variety was voted an Award of Merit; a similar award was given to a grand plant of *Cypripedium* × *Shillanum* var. *giganteum*. (Bronze Medal.)

Messrs. KEELING & SONS, Westgate Hill, Bradford, staged a varied group of plants, to which a Bronze Medal was awarded. *Miltonia* × *Blunthi*, Keeling's variety, was given an Award of Merit.

Mr. W. BOLTON, Warrington, exhibited fine plants of *Cattleya* × *Hardyana* var. *rubescens* and *Cypripedium* × *Boadicea* var. *magnifica*. Both these plants received Awards of Merit.

E. ASHWORTH, Esq., Wilmslow (gr. Mr. Holbrook) exhibited *Dendrobium macrophyllum*, a plant not frequently met with, and remarkable for its green flowers. It was granted an Award of Merit.

E. ROGERSON, Esq., Didsbury (gr. Mr. Price) obtained Awards of Merit for three *Cypripediums*, viz., *C.* × *Rene*, *C.* × *Mennon* var. *magnificum*, and *C.* × *Olga* Bagshaw Oakdene Variety.

W. FARRER, Esq., Carnforth, exhibited two hybrid *Cypripediums*, evidently forms of *C.* × *Actæus*.

H. J. BROMILOW, Esq., Rainhill (gr. Mr. Morgan) gained an Award of Merit for *Cypripedium* × *Actæus* var. *revoluta*.

Dr. A. HODGKINSON, Wilmslow, was granted a First Class Certificate and a special vote of thanks for *Dendrobium Lowii*, a well-grown but small plant of this very difficult subject to cultivate.

Mr. J. ROBSON, Altrincham, exhibited *Cypripedium* × *Robsoniae*.

Mr. D. MCLEOD, Chorlton-cum-Hardy, also exhibited some good *Cypripediums*. P. W.

ROYAL BOTANIC.

OCTOBER 9.—At the show held on this date, the chief exhibitors were those following:—Messrs. T. S. WARE, LTD., Feltham, staged Dahlias, Asters, &c. (Large Gold Medal.) Mr. ERIC SUCH, Maidenhead, showed a large display of autumn flowers, *Chrysanthemums*, perennial Asters, *Kniphofias*, &c. (Gold Medal.) Messrs. BARR & SONS, Thames Ditton, exhibited hardy flowers extensively. Asters were well shown, and included many choice new varieties; *Chrysanthemums* and *Kniphofias* were also prominent. *Gladiolus Childsii* W. Falconer has flowers a pleasing shade of rosy-salmon. Certificates of Merit were awarded to *Aster cordifolius* "Ideal," a variety with small lavender-coloured flowers; *Kniphofia Obelisque*, with flowers coloured a deep yellow, with a shading of orange, and each spike had smaller lateral spikes just below the main spike; both shown by Messrs. BARR & SONS; *Solidago* "Golden Wings" from Mr. E. SUCH; and *Gaillardia grandiflora* "Lady Rolliston," a distinct variety, with large, pure yellow flowers: shown by Messrs. HARRISON & SONS, Leicester.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending October 16.

The heaviest rain for 15 months.—The weather remained warm in the early part of the week, but since then lower temperatures have prevailed. On the two warmest days the highest reading in the thermometer screen was 61°, and on the coldest night the exposed thermometer showed 4° of frost. The ground is at the present time rather warmer than is seasonable, both at 1 and 2 feet deep. Since the month began rain has fallen on all but four days, and to the aggregate depth of 2½ inches. On the 14th over 1 inch of rain fell—making this the wettest day since the end of June, 1906. Between 5 and 6 p.m. on that day half an inch of rain was deposited. This heavy fall re-started the percolation gauge on which short grass is growing, which had been dry since the third week in July, and since then about three gallons of rain-water has come through that gauge, and over four gallons, or very nearly the whole of the rainfall, through the bare soil gauge. The sun shone on an average for 4½ hours a day, or for about an hour a day longer than is usual at this season. Throughout the week the wind has been moderately high, but in no hour did the mean velocity exceed 15 miles—direction S.E.E. The mean amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by one per cent. E. M., Berkhamsted, October 16, 1907.

SCHEDULES RECEIVED.

ALTRINCHAM, BOWDON, SALT, HALE AND DISTRICT CHRYSANTHEMUM SOCIETY'S exhibition, to be held in the Drill Hall, Hale, on Tuesday and Wednesday, November 12, 13, 1907. Hon. secretary, Wm. Hazlehurst, 20, Ashley Road, Altrincham.

HUNTINGDONSHIRE DAFFODIL AND SPRING FLOWER SOCIETY'S show, to be held in the Corn Exchange, Huntingdon, on Tuesday, April 21, 1908. Hon. secretary, Miss L. Linton, Stirtloe House, Buckden, Huntingdon.

DARLINGTON HORTICULTURAL SOCIETY'S autumn flower show, to be held in the Drill Hall, Darlington, on Wednesday, November 20, 1907. Hon. secretary, Mr. A. H. Harrow, Priestgate House, Darlington.

STOKE NEWINGTON AND DISTRICT CHRYSANTHEMUM show, to be held at St. Matthew's Parish Room, Warwick Road, Clapton, on Wednesday and Thursday, November 6, 7, 1907. Hon. secretary, Mr. W. Edwards, 12, Sutton Road, South Tottenham.

TRANSVAAL HORTICULTURAL SOCIETY'S spring show, to be held in the Wanderers' Grounds, Johannesburg, on November 29, 30, 1907. Hon. secretary, Mr. A. Dowdle, Box P.O. 1,054 Johannesburg.

MARKETS.

COVENT GARDEN, October 16.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—ED.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Asters, per dozen			<i>Lilium longiflorum</i>	2 0-2 6	
— bunches	1 0-2 0		— <i>tigrinum</i>	1 6-2 0	
Bouvardia, per dz.			<i>Lily of the Valley</i> ,		
— bunches	4 0-6 0		— p. dz. bunches	4 0-6 0	
<i>Calla æthiopica</i> , p.			— extra quality	8 0-12 0	
dozen	1 6-2 6		<i>Marguerites</i> , white,		
Carnations, per			— p. dz. bunches	2 0-3 0	
dozen blooms,			— yellow, per dz.		
best American			— bunches	2 0-3 0	
various	1 0-2 6		<i>Mignonette</i> , per dz.		
— smaller, per			— bunches	2 0-3 0	
doz. bunches	9-12 0		<i>Odonoglossum</i>		
<i>Cattleyas</i> , per doz.			— <i>crispum</i> , per		
blooms	10 0-12 0		dozen blooms	2 0-2 6	
<i>Chrysanthemums</i> ,			<i>Pancratium</i> , per		
best blooms, p.			dozen fls.	2 0-3 0	
dozen	1 0-2 0		<i>Pelargoniums</i> ,		
— small, per doz.			— show, per doz.		
bunches	3 0-4 0		— bunches	4 0-6 0	
— maximum	1 0-2 0		— Zonal, double		
<i>Coreopsis</i> , per doz.			scarlet	4 0-6 0	
bunches	2 0-3 0		Roses, 12 blooms,		
<i>Cornflower</i> , per dz.			— <i>Niphetos</i>	1 0-3 0	
bunches	1 0-2 0		— <i>Bridesmaid</i>	2 0-3 0	
<i>Cypripediums</i> , per			— C. Testout	2 0-3 0	
dozen blooms	2 0-2 6		— General Jacque-		
<i>Dahlias</i> , doz. bchs.	1 6-2 6		minot, per doz.		
<i>Eucharis grandi-</i>			— bunches	1 0-2 0	
flora, per doz.			— <i>Kaiserin A.</i>		
blooms	2 0-3 0		Victoria, dozen		
<i>Gaillardias</i> , per dz.			blooms	1 6-3 0	
bunches	1 6-2 0		— Mrs. J. Laing	1 0-3 0	
<i>Gardenias</i> , per doz.			— C. Mermet	1 0-3 0	
blooms	1 6-2 0		— Liberty	1 0-2 6	
<i>Gladiolus</i> , various			— Mad. Chateau	1 0-3 0	
hybrids, per dz.			<i>Scabious</i> , per doz.		
spikes	1 0-2 0		— bunches	2 0-3 0	
— <i>Frenchleyensis</i>	2 0-3 0		<i>Statice</i> , per dozen		
<i>Gypsophila elegans</i>			— bunches	2 6-3 0	
p. dz. bunches	2 0-3 0		<i>Stephanotis</i> , per		
Heather, doz. bchs.	2 0-4 0		dozen trusses	3 0-5 0	
<i>Lapageria alba</i> , dz.	1 0-1 6		<i>Tuberose</i> , per dz.		
<i>Lilac</i> (French), per			blooms	0 4-0 6	
bunch	3 0-4 0		<i>Violets</i> , per dozen		
<i>Lilium auratum</i>	2 0-3 0		— bunches	1 0-2 0	
— <i>lancifolium</i> ,			— <i>Parma</i> , per		
rubrum and			bunch	1 6-2 0	
album	1 6-2 0				

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
<i>Adiantum cuneatum</i> ,			Hardy foliage		
per dozen			(various, per		
bunches	4 0-6 0		dozen bunches	2 0-6 0	
<i>Asparagus plum-</i>			Ivy-leaves, bronze	2 0-2 6	
osus, long			— long trails per		
trails, per doz.	8 0-12 0		bundle	1 6-3 0	
— medium,			— short green,		
bunch	1 6-2 0		doz. bunches	2 0-3 0	
— <i>Sprengeri</i>	0 6-1 0		Moss, per gross	4 0-5 0	
<i>Berberis</i> , per doz.			<i>Myrtle</i> (English),		
bunches	2 0-2 6		small-leaved,		
<i>Croton leaves</i> , per			doz. bunches	4 0-6 0	
bunch	1 0-1 6		— French, dozen		
<i>Cycas leaves</i> , each	1 6-2 0		bunches	1 0-1 6	
<i>Fern</i> , English, per			<i>Pernettya</i> , p. bunch	0 9-1 0	
dozen bunches	1 0-2 0		<i>Physalis Franchetii</i> ,		
— French, dozen			per dz. bunches	3 0-5 0	
bunches	1 0-3 0		<i>Smilax</i> , p. dz. trails	1 6-2 6	

Plants in Pots, &c. Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
<i>Ampelopsis</i> Veit			<i>Euonymus</i> , per dz.	4 0-9 0	
— chin, per dozen	6 0-8 0		<i>Ferns</i> , in thumbs,		
<i>Aralia Sieboldi</i> , per			per 100	7 0-10 0	
dozen	4 0-6 0		— in small		
— larger	9 0-12 0		— large 60's	12 0-20 0	
<i>Araucaria excelsa</i> ,			— in 48's, per dz.	4 0-10 0	
per dozen	12 0-30 0		— in 32's, per dz.	10 0-18 0	
<i>Aspidistras</i> , green,			<i>Ficus elastica</i> , per		
per dozen	18 0-30 0		dozen	8 0-10 0	
— variegated, per			— repens, per dz.	4 0-6 0	
dozen	30 0-42 0		<i>Fuchsias</i> , per doz.	3 0-5 6	
<i>Asparagus plum-</i>			<i>Kentia</i> Belmore-		
osus nanus, doz	9 0-12 0		— ana, per dozen	18 0-24 0	
— <i>Sprengeri</i> , dz.	9 0-12 0		— <i>Fosteriana</i> , per		
— <i>tenuissimus</i>			dozen	18 0-24 0	
per dozen	9 0-12 0		<i>Latania borbonica</i> ,		
<i>Asters</i> , per doz.	3 0-6 0		per dozen	12 0-18 0	
<i>Bouvardias</i> , per dz.	6 0-8 0		<i>Lilium longi-</i>		
<i>Chrysanthemums</i> ,			— <i>florum</i> , per dz.	12 0-24 0	
per dozen	4 0-8 0		— <i>lancifolium</i> ,		
— best disbudded	12 0-18 0		per dozen	12 0-18 0	
<i>Clematis</i> , per doz.	8 0-9 0		<i>Lily of the Valley</i> ,		
— in flower	12 0-18 0		per dozen	10 0-12 0	
<i>Cocos Weddell-</i>			<i>Marguerites</i> , white,		
— ana, per dozen	9 0-18 0		per dozen	4 0-6 0	
<i>Coleus</i> , per dozen	2 0-4 0		<i>Pelargoniums</i> ,		
<i>Crotons</i> , per dozen	12 0-30 0		— Zonals, per dz.	4 0-6 0	
<i>Cyperus alternifo-</i>			<i>Selaginella</i> , per		
— lus, dozen	4 0-5 0		dozen	4 0-6 0	
— laxus, per doz.	4 0-5 0		<i>Solanums</i> , per doz.	6 0-9 0	
<i>Dracenas</i> , per doz.	9 0-24 0		<i>Spiraea japonica</i> ,		
<i>Erica gracilis</i> , per			per dozen	6 0-10 0	
dozen	10 0-12 0		<i>Verbena</i> , Miss-Will-		
— <i>nivalis</i> , per dz.	15 0-18 0		— mott, per dozen	4 0-6 0	
— <i>hyemalis</i>	12 0-18 0		<i>Veroncas</i> , per dz.	5 0-8 0	

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples (English), per bushel			Melons, Cantaloupe, each	0 4	0 5
Bramley's Seedling	4 3-4 9		Valencia, case	10 0	12 0
Lord Derby	4 0-4 6		Nuts, Cobs (English), per lb.	0 8	0 4
Warner's King	4 0-4 9		Filberts	0 2	—
Lord Suffield	3 6-4 0		Walnuts (French), dozen lbs.	4 6	—
Ecklinville Seedling	3 9-4 6		Grenoble-Walnuts, per bag	9 0-9 6	
Keswick Codlin	2 3-3 0		Almonds, bag	5 10	—
Peasgood's Nonsuch	5 0-7 0		Brazils, new, per cwt.	40 0-42 6	
King Pippin	4 6		Barcelona, per bag	32 6	—
Cox's Pomona	3 6-4 6		Cocoa nuts	100	12 0-17 0
Blenheim Pippin	3 6-4 6		Oranges (Australian), per box	8 0-12 0	
Worcester Pearmain, pr. sieve	2 6-4 0		Naples, p. case	11 0-17 0	
Beauty of Bath	2 6-2 9		Jamaican, per case	11 0-13 0	
Gladstone	2 3-2 6		Peaches (English), per dozen		
Cox's Orange Pippin	3 0-6 0		1st quality	8 0-12 0	
Nova Scotia			2nd	1 0-2 6	
Gravensteins, per barrel	14 0-15 0		French, per box	1 3-1 6	
Ribston	18 0-24 0		Pears (English), sieve	1 0	3 0
Californian			per bushel	2 3-5 0	
Newtowns, per box	13 6-14 6		French, Doyenne du Comice, per crate	7 6-12 0	
Bananas, bunch:			French, Louise Bonne de Jersey, per crate	8 0	10 6
No. 2 Canary	4 6		Duchess d'Angoulême, per crate	9 0-11 6	
No. 1	5 0-6 0		Catillac, Dutch, per basket	2 6	—
Extra	6 6-7 0		per barrel	10 0	—
Giants	8 0		(Californian), per box	7 0-8 0	
Jamaica	5 0-5 6		American Bartlett Pears, per box	6 0-6 3	
Loose, per dz.	0 9-1 3		(Californian), Dovey du Comice, p. box	20	—
Cranberries, p. case	8 6-9 6		Italian, basket	1 6-1 9	
Dates (Tunis), doz. boxes	2 6		Damson (English), sieve	0 9-1 6	
Figs (Guernsey), p. dozen	0 9-1 0		Plums (English), p. sieve	3 6-4 3	
Italian, box	0 10-1 2		Monarchs	3 0-4 0	
Grape Fruit, case	10 6-12 6		English Prunes	2 0-2 6	
Grapes (English):			Californian, per box	6 0-6 3	
Hambro's, p. lb.	0 4-1 0		Gages (English), sieve	1 6-3 0	
Alicante, per lb.	0 6-1 0		Pineapples, each	1 6-2 6	
Gros Maroc, per lb.	0 8-1 0		Quinces (French), per crate	2 0	—
English Muscats, per lb.	1 0-3 0		— Lisbon, p. case	11 0-11 6	
Canon Hall, per lb.	2 0-3 6				
Belgian Hambro's, per lb.	0 6-0 9				
Lisbon, p. case	5 6-6 6				
Dema, barrel	5 0-6 0				
Almeria, per barrel	7 0-17 0				
Lemons:					
Messina, case	17 0-18 0				
Naples, p. case	19 0-30 0				
Lyches, per box	1 0				
Mangoes, per doz.	4 0-8 0				
Melons (Guernsey), each	0 8-2 0				
French, Rock, each	2 6-3 0				

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes (French), per dozen	2 0	—	Marrows (English), per tally	3 0	—
Aubergines (French), per doz.	1 0	—	Mint, doz. bunches	0 9-1 0	
Beans, home grown, per bushel	2 0-2 6		Mushrooms (house), per lb.	0 6-0 8	
Beetroot, bushel	1 3		Buttons, per lb.	0 10	—
Cabbages, per doz.	0 6-0 9		"Broilers", p. lb.	0 5-0 6	
Greens, bag	1 0		Mustard and cress, per doz. pun.	1 0-1 6	
Red, per dozen	2 0		Oms (Spanish), per case	5 0	—
Carrots (English), dozen bunches	1 0-2 0		Dutch, per bag	4 0	—
Washed, per bag	2 6		Pickling, per bushel	2 0-2 6	
Cauliflowers, per dozen	0 9-1 0		Peas (English), per bushel	2 6-4 0	
per tally	4 0		Parsley, 12 bunches	1 6-2 0	
Celeriac (French), per dozen	2 0-2 3		per bushel	1 0-1 6	
Celery, washed, per dozen	0 10-1 0		Radishes (Guernsey), doz. bun.	0 4-0 6	
Chow Chow (Securium edule), p. dozen	3 0	—	Salsify, p. dz. bds.	3 6	—
Cucumbers, p. dz.	1 6-2 0		Spinach, English, per bushel	0 9-1 0	
Endive, per dozen	1 6-1 9		Tomatoes:		
Horseradish, foreign, per doz. bundles	12 0	—	French, p. case	2 0-2 3	
Leeks, 12 bundles	1 6	—	selected, per dozen lbs.	2 0-3 0	
Lettuce (English), Cos, per score	1 0-1 3		small selected, per dozen lbs.	2 0-2 6	
French, p. doz.	0 9-1 0		Turnips (English), doz. bunches	2 0-3 0	
			per bag	2 6	—
			Watercress, per doz. bunches	0 4-0 6	

REMARKS.—Home-grown Peaches are generally of very inferior quality; the very best samples are realising high prices. Nectarines are now finished. A plentiful supply of Apples is arriving, principally from Kent; dessert varieties, including Cox's Orange Pippin, are selling at much advanced prices. Trade is quiet for home-grown Tomatoes, but for fruits of a good colour there is a brisk demand. Jamaica Oranges are arriving in increased quantities; these fruits are of fine quality. P. L., Covent Garden, October 16, 1907.

POTATOS.

Kents, 3s. 6d. to 5s. per cwt.; Bedford, 70s., 90s.; Lincolls, 70s., 90s.; Blacklands, 75s. to 85s.; Maincrops 85s. to 100s. per ton. Prices show an advance all round. The Scotch crops are being harvested, but up to the present supplies from this source have not affected the market greatly. Buyers are seeking to lower prices, but it is expected the value of Potatoes will still advance. The crops in Lancashire, Cheshire and Ireland are below the average, and northern salesmen are purchasing largely from Covent Garden Market. J. D. C., Covent Garden, October 16, 1907.

COVENT GARDEN FLOWER MARKET.

Best quality plants of Chrysanthemums which have been disbudded have made good prices during the past week, especially the variety Soleil d'Or, extra good plants of which have realised 24s. per dozen. The varieties W. Holmes, Mrs. Wingfield, Souvenir de Petite Amie, Le Pacatole, Caprice du Printemps, and Kathleen Thompson are now at their best condition. I have rarely seen white Marguerites so good at this time of year as they are this season, but they are over plentiful and prices are in consequence low. Spiraeas have also a good demand. A few Roses, including the Madame Levasseur and Tea varieties, are seen, but supplies are very uncertain. Genistas in flower are to be had but they are out of season. Ericas are now well flowered. E. gracilis is well coloured; the white varieties have a tendency to exhibit reversion. Zonal Pelargoniums in well flowered plants include Mrs. Lawrence, Hermione, F. V. Raspail and others. Asters are procurable and I noticed well flowered plants of a pretty pink variety unknown to me. Some dwarf, well flowered plants of perennial Asters were observed on Messrs. Groves and Son's stand. Plants of A. cordifolius, A. ericoides and A. vimineus from late-rooted cuttings are dwarf. Bouvardias are plentiful. Verbenas are now almost finished for the season. Lilliums are very good, also Lily of the Valley. Some Fuchsias are seen, but supplies may now be finished at any time. Solanums in well berried plants are now plentiful. Prices for best Palms have advanced, and especially for good Kentias in 49 and 82 size pots. Latanias are realising advanced prices, and they will probably become more valuable. Cocos may also command better prices. Ferns are well supplied in all sizes; prices vary but little. Many imported Aspidistras are now on the market. Dracaenas, Aralia Sieboldi, Ficus, Crotons, Cyperus, &c., are all well supplied.

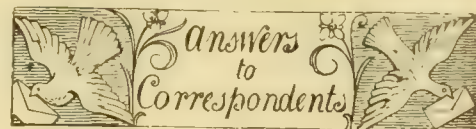
CUT FLOWERS.

Parma Violets seem to have become plentiful suddenly during the past week. The first I saw were not of the best quality, but I noted a great improvement in the samples seen this morning (Wednesday). Very fine blue Violets can now be had. I noted some extra fine flowers of La France from an English nursery. "Mimosa" is already arriving from France, but it is not the same species (of Acacia) as seen early in the spring. White Lilac is very good. Lilliums are inclined to advance a little, but Callas are not making good prices. The value of Roses is uncertain; some of best quality have sold at advanced prices. Carnations are cheaper than they were at the corresponding period of last year. Orchids are well supplied. Cattleya labiata is now at its best. Odontoglossums and Cypripediums are plentiful. Chrysanthemums are plentiful in all qualities, and as long as supplies from the open ground are available, prices will not improve. There is a little advance in the value of best blooms. Foliage and sprays of berried shrubs are well supplied. The red Oak, Quercus coccinea, is now well-coloured. Beech sprays, with yellow leaves, are extensively sold. J. H., Covent Garden, Wednesday, October 16, 1907.

ENQUIRIES AND REPLIES.

PLANTS GROWING NEAR THE COAST. (1) Why are some plants more vigorous near the sea than they are inland? (2) Why is it possible to grow many tender plants outside during winter near the coast that perish in that position further inland? Is it alone due to the power of the sea, or gulf stream, in equalising the temperature? (3) Why are the leaves of the same plants thicker and more glaucous near the seaside than elsewhere, and the flowers larger, and intensified in colour? (4) What are the properties of the sea air that are so beneficial to some plants? Is it its saline nature; if so, would it not be possible to produce this artificially for some plants by the means of sprays of dilute solutions? J. C.

(1) The increased vigour is due to succulence of growth, which is a common attribute of plants near the sea, and is found in such examples as Sea Kale, Horned Poppy (Glaucium), &c., all of which, when growing on the coast, have fleshy leaves with thick rinds which prevent undue evaporation. The common Wallflower will, if sprayed with a very weak brine, develop this thick, leathery foliage. In our issue for May 25, 1907, p. 332, is an account of a Primrose that was found close by the Corbière lighthouse in Jersey, and in which the foliage had thickened enormously. (2) This is due to the more equable temperature obtaining near the sea. Water parts with heat much less readily than soil; consequently, the sea is, in winter, generally warmer than land in the same latitude, and plants growing on the coast are influenced by this extra warmth. (3) The first part is answered under 1. The more intense light near the coast produces a brighter floral effect than in inland places. Inland much of the sun's light is absorbed by the soil; water, on the contrary, reflects the sun's rays. (4) The saline properties in the atmosphere are undoubtedly the cause of the extra growth in coastal plants, and many experiments have been conducted by spraying with a solution of common salt, the results being a very great increase in thickness of leaves, &c.



APPLE TWIGS: A. A. Your Apple tree has no fungus disease. It is probable that two years ago it suffered from a slight attack of frost, which has killed small tissues, and it grows unhealthily, and is trying to overcome the injury. The tissues show plain distortions, such as generally result from early frost.

ASSESSMENT: J. S. S. In your enquiry as to "assessment for tax," we assume you refer to income tax and not to rates. The assessment for income tax on glasshouses, vineries, and market gardens is estimated according to Schedule D. of the Income Tax Act, 1842—that is, on a three years' average of the annual net profit derived from the business. Farmers, on the other hand, come under a different rule by special statutory provisions. Although you would be assessed under Schedule D., the tax, when thus ascertained, is charged under Schedule B., because your income represents "profits derived from the occupation of land." The area or condition of your glasshouses is, for this purpose, immaterial.

CORRECTION: For Peronospora infestans on p. 271, column 2, read Peronospora viticola.

CYANIDING IN PLANT HOUSES: M. G. K. You will find the process fully described in the issue for April 23, 1904, p. 271.

DESFONTANIA SPINOSA: A. W. This shrub succeeds out of doors in sheltered positions in the warmer counties. In the colder counties of the Midlands and north it is not sufficiently hardy.

GOOSEBERRY AND CURRANT SHOOTS: G. P. On the Currant shoots there is the "sooty mould" (Fumago vagans), common on the Lime and other trees—with a little also on the Gooseberries twigs, together with a minute Phoma, but there is no trace of American mildew (see Fungoid Pests of Cultivated Plants, p. 162, pl. xiv., fig. 21).

GRAPES: W. J. M. The condition known as shanking is the result of the vines having suffered a check during their season of growth. The cause can usually be traced to a defective rooting medium, and should you suspect the borders to be in an unsatisfactory condition, the proper plan will be to overhaul them in the resting season. Improper culture will also cause the berries to become shanked.—W. B. J. The berries show traces of shanking. The brown marking is the result of rubbing the "bloom" from the berries, probably when the bunches were being thinned.

HEATING CONSERVATORY, 20 FEET BY 12 FEET: Brighton. Install a No. 1 "Loughborough" heating apparatus, the fixing in position of which is very simple and inexpensive; it being only necessary to break a hole in the brickwork of the conservatory at the lowest end, and to place the boiler flush with the wall in the opening thus made. Afterwards attach thereto one 4-inch pipe and carry it round three sides of the house—that is, up the right-hand side from boiler round the top end and back along the other side of the house to feed syphon. The "Loughborough" boiler is virtually a saddle boiler on end. The front is solid, pierced with three doors, the uppermost one being that through which the fuel is placed on the fire, the middle one for raking out the fire, and the lowest for cleaning out the ashes. No building and excavating for stokehole, formation of flues round the boiler, and brick chimney are necessary in the setting and employment of the "Loughborough" boiler. Fifty-one feet of 4-inch piping and three 4-inch bends will be required to heat your conservatory, the joints being made either of cement or elastic (rubber) rings. If your house is a tenant's fixture, we should recommend you to use the rubber ring joints. In fixing the pipes allow a gradual rise from the boiler to the feed syphon of 1/4-inch in 9 feet (nearly 3 inches rise from boiler to syphon). The entire cost of No. 1 heating apparatus complete (including

the 51 feet of 4-inch piping and three bends) would be about 10 guineas. The heating of a conservatory or greenhouse by means of hot water is not only better for the health of the plants, and more efficient, but also cheaper in the end than heating either by gas-heated pipes or oil. Other good boilers for heating small greenhouses are the "Beeston" (in sizes to heat from 40 to 1,000 feet of 4-inch piping), the "Robin Hood Junior" (240 feet to 480 feet), the "White Rose," series F. (250 feet and upwards), the "Independent Star" (65 to 200 feet), and the "Victor" (80 to 380 feet). There are many other suitable and efficient boilers advertised in our pages from time to time.

HORSE AND COW MANURE: *La France*. Horse manure is decidedly richer in plant food than is cow manure, and more especially is this the case with the urine. The horse urine is nearly four times as rich in nitrogen as the cow urine, and the readiness with which this liquid is converted into plant food is clearly demonstrated on entering a stable. The carbonic acid of the air enters at once into combination with the nitrogen of the urine, converting it into carbonate of ammonia, which is given off as gas, and is detected by one's sense of smell. The following figures will show the relative value of the two manures in lbs. per ton.

	Nitrogen.	Potash.	Phosphoric Acid.
Droppings of	lb.	lb.	lb.
Horse ...	17	13	9
Cow ...	9	8	3
Urine of			
Horse ...	42	33	—
Cow ...	11	31	—

Horse droppings contain less moisture than cow manure, and are not so coherent. Owing to this circumstance, horse droppings are readily distributed in the soil, and pass rapidly into a decaying condition; hence horse manure is termed a "hot" or forcing manure, and the plant-food properties become quickly available for use. Horse-dung without litter is by no means a lasting manure, and its effects do not extend much beyond the first year of application. Cow-dung, on the contrary, owing to the large proportion of water it contains, is termed a "cold" manure, and decomposes slowly in the soil. It is, however, of great value where a lasting effect is desired. Much depends upon the character of the soil as to which manure is the more suitable. For the heavier and clayey soils horse manure is better, while for the lighter and sandy soils cow manure is to be preferred. It has been found that if cow-dung is dried on the top of a furnace to get rid of the excess of water, it then forms a splendid fertiliser for Roses and many other plants. Equal portions of dried cow-dung and horse droppings mixed together form a most useful fertiliser.

IXORA: *J. F. S.* Your plant being in good health, the present blooms will not injure it in the least. After flowering is past, prune the shoots only as much as is necessary to preserve the symmetrical form of the plant. Tie out the growths to form the foundation of a specimen, and place the plant in the warmest house you have, keeping it well exposed to the light. Re-pot the plant early in spring when growth is active, and shade it from the sun for a few days after the operation. Following this stage, encourage the plant to grow strongly, with little or no shade, in an atmospheric temperature of 70° to 75° at night, allowing it to rise 10° during the day with sun-heat. Close the house early in the afternoon that the heat may rise to 90° if possible. Keep the leaves perfectly clean, and feed the roots with stimulating manure as may be necessary. You should have no difficulty in getting the plant to an excellent condition by the time mentioned.

LANDLORD'S RIGHT TO PLANTS: *F. C. J. S.* In the case of a private tenant of a house and garden (as distinguished from a nurseryman or market gardener), whatever is planted by him in the soil becomes part of the freehold, and, accordingly, belongs to the landlord. This is clearly established in the case of all plants and shrubs. As to your rockery,

although structures resting merely by their own weight on the surface of the ground, do not become landlords' fixtures, the Court would probably hold that a rockery sunk in the ground and at least partially covered by soil and plants is sufficiently affixed to the soil to be regarded as a landlord's fixture.

METROSIDEROS: *R. O.* It is quite usual for the fruits of this plant to remain persistent for a long period. If they fail to dehisce at all in your locality, the reason will probably be found to be the failure of the seeds to become developed. The generally accepted name for the Common Broom is *Cytisus scoparius*, but the species has formerly been described in botanical works under several others, which have been discarded, owing to the application of the rule of priority.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time; they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. Correspondents not answered in one issue are requested to be so good as to consult the following numbers.

FRUITS: *G. W. B.* 1, Fulwood; 2, Alfriston; 3, Castle Major.—*N. S.* Beurré Hardy.—*C. E. A.* 1, Ribston Pippin; 2, Stirling Castle; 3, Hornead's Pearmain; 4, Ribston Pippin; 5, Tower of Glamis.—*Dean.* 1, A deformed fruit which we cannot identify; 2, Lodgemore Nonpareil; 3, Franklin's Golden Pippin.—*W. D. & S.* 1, Potts' Seedling; 2, Smart's Prince Arthur.

PLANTS: *S. E. L.* 1, *Lonicera involucrata* (syn. *Ledebouri*); 2, *Lycasteria formosa*; 3, *Ceanothus americana*, garden variety; 4, *Astrantia major*; 5, *Veronica Hectori*; 6, *Mesembryanthemum polyanthum*.—*F. W. M.* *Crinum Moorei* var. *alba*.—*J. U.* 1, *Bignonia ornata*; 2, *Helix Soleirolii*.—*A. T.* 1, *Microstylis congesta*; 3, *Liparis capensis*; 3, *Bartholina pectinata*; 4, *Satyrium carneum*.—*A. F. Gogar.* 1, *Selenipedium Schlimii*; 2, the unstriped form of *Cymbidium Gammieanum*; 3, *Cymbidium longifolium*.—*D. O. N.* *Pentstemon lævigatus*, figured in *Botanical Magazine*, t. 1425.—*J. B., Cheshire.* *Solanum Wendlandii*, the *Hibiscus* sent last week seems to be a form of the common *Hibiscus syriacus*, probably an introduced plant in Colombia. Send flowers with leaves when available.—*S. S. A.* *Euphorbia Cyparissias*.—*A. V. C.* A species of *Gleditschia*, it is impossible to say which without flowers or fruit. We know of no other tree than the *Cercis* that is called Judas tree. The plant from which the crown of thorns was made is, by some persons, stated to be a species of *Gleditschia*.

NEPENTHES WITH TWO PITCHERS FROM ONE LEAF: *E. B.* The case you describe must be very rare. It is probably the result of the fusion of two leaves, but we could not say definitely without seeing the specimen.

NUTS DAMAGED: *P. L. H.* The Nuts have been eaten by either squirrels or mice.

PEARS DEFORMED: *A. B.* The injury has not been caused by the Pear-midge, but by an imperfect fertilisation of the ovules or seeds. "Pips" which are not fertile will be found on the corresponding side of the depression. The swelling of the ovules, due to changes brought about by fertilisation, acts as a stimulus to the surrounding tissue, including in the case of the Pear a part of the thalamus, which does not belong to the true fruit. There are also slight traces of scab (*Fusicladium pirinum*) on your Pears. To combat this fungus you should spray the trees before the flower-buds have expanded with a solution of iron sulphate—1 lb. to each gallon of water. When the fruits have set, spray with the Bordeaux mixture (see *Gardeners' Chronicle*, August 24, 1907) at intervals of two or three weeks. Burn the leaves after they have fallen.

PLANTS FOR HAMPSTEAD: *H. D. R.* Lily of the Valley will thrive in any aspect. The following Roses will be found to succeed in this suburb:—Killarney, La France, Caroline Testout, Mad. Abel Chatenay, Longworth Rambler, Madame Ravary, Mme. Constant Soupert, Cheshunt Hybrid, Captain Christy, Clio, General Jacqueminot and Mme. Lambard. All the plants you mention with the exception of the Myrtle will flourish at Hampstead. Of Apples you should select (*Dessert*) Mr. Gladstone, Irish Peach, Lady Sudeley, Worcester Pearmain, James Grieve, Ribston Pippin, Cox's Orange Pippin, Allington Pippin, Ross Nonpareil and Christmas Pearmain. (*Culinary*) Lord Suffield, Ecklinville Seedling, Golden Spire, Warner's King, Dume-low's Seedling, Lane's Prince Albert, Newton Wonder, Bramley's Seedling and Annie Elizabeth. Two suitable Pears for your south wall are Thompson's and Fondante d'Automne. Two Peaches may be found in Violette Hâtive and Bellegarde. There is a variety of Rhubarb known as "Christmas," and if you purchase a few roots without delay they will furnish you with a supply of Rhubarb at about the New Year. We do not know if this is what you mean by Perpetual Rhubarb.

PLUM TREE BLIGHT: *A. J. W.* Your trees are suffering from the Plum-tree rust (*Puccinia Pruni*). Gather and burn the leaves to prevent the disease spreading. Syringe the trees with the Bordeaux mixture.

ROSE: *J. R.* We could not determine the cause of the trouble without specimens for examination, and possibly it would also be necessary for us to know the exact conditions in which the plants are growing.

ROSE LEAVES: *E. D.* Your Roses exhibit two diseases. The Rose-leaf blotch (*Actinonema Rosæ*) and the Rose rust and brand (*Phragmidium subcorticium*), with its *Uredo* stage. For both diseases we can suggest nothing better than syringing the plant with the Bordeaux mixture and burning all the diseased leaves by fire.

TOMATOS: *E. F. C.* The trouble appears to be the Bacteriosis, known best in the United States, for which no remedy has yet been found. It will be well to remove all diseased plants and burn them to prevent the other plants becoming infected.—*B. T. A.* The fruits are affected with a fungus—*Macrosporium Tomato*. When a fruit has become infected you can do nothing to prevent the fungus developing with it. Diseased fruits should, therefore, be burned as soon as disease is seen on them. Do not cultivate Tomatos in the same house next season.

TUBEROUS BEGONIAS: *Amateur.* The Begonia seed should have been sown towards the end of January or in February. All that can be done now is to encourage the plants to make as much growth as possible during the autumn by giving careful attention to the watering. When growth ceases and the leaves begin to change colour watering must be discontinued. By that time it will probably be found that small tubers have been developed, and these may be allowed to remain in the dry soil until the spring, when they may be started into growth in the usual manner. It would be useless to attempt to grow the plants continuously through the winter.

VIOLETS DISEASED: *F. G.* The fungus causing this disease (*Ascochyta violae*) may be destroyed by spraying with potassium sulphide, 1 ounce to 3 gallons of water.

WEED IN LAWN: *W. J. W., Id.* The plant is the Common Self-heal—*Prunella vulgaris*. Encourage the growth of the Grasses by a liberal dressing of some nitrogenous manure, and the weeds will in time be crowded out.

WEIGHTS OF A BUSHEL OF VEGETABLES: *J. Mc.* A bushel of Broad Beans weighs, approximately, 36 lbs.; Peas, 40 lbs.; Beetroot, 56 lbs.; Onions, 56 lbs. A bag of Carrots should weigh 112 lbs.; a tally of Marrows is reckoned at 60.

COMMUNICATIONS RECEIVED.—*R. A.*, Cap d'Antibes—*G. M.*, A. G. N.—*J. C.*, Bakers—*C. A.*, F.—*E. M.*, G. W.—*C. T. D.*, R. T. H.—*J. G. W.*, Chloris—*J. H.*, R. P. B.—*T. W. B.*, W. H.—*H. M. V.*, F. M.—*G. H.*, New Zealand—*S. A.*, L.—*C. J.*, C.—*W. H. C.*, G. Bunyard—*G. W.*, R. L. H.—*H. J. C.*, J. A. S.—*W. W.*, R. P.—*N.*, & *W.*—*J. B. M.*, E. H. B.—*A. E.*, Henley—*G. H. S.*, E.—*S. G. F. E. M.*, G. H., California—*J. Canber*—*F. G. Murray*—*Sir A. Rolitt*—*G. T.*, E. H.—*G. S.*, S.—*S. E. H.*, C. A. F.—*J. C.*, S. W.—*R. S.*, A. G. N.—*G. M.*, W. J. F.—*A. S.*



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GOLDEN AND VARIEGATED YEWS.

TAXUS baccata, the common Yew, compares with the Holly in the number of varieties that have arisen under cultivation from the one indigenous species, and also in the diversified character of these forms, which differ from each other and from the parent species far more than does the common Yew from the two or three other species of Taxus. Of the 40 or more varieties of Yew cultivated in this country, about a dozen have either golden or variegated foliage which renders them suitable subjects for garden decoration. They are especially valuable for those parts of a garden where a certain formality and brightness are required, as they are very amenable to training, and, being slow of growth, rarely become too large for their position. These ornamental Yews are also adapted for planting in terrace gardens, in small beds, or as isolated specimens when they have attained to a sufficient size, though it must be remembered that many years must elapse before a Golden Yew reaches 6 feet or more in height. Ornamental-leaved Yews present a bright appearance throughout the year, but they are at their brightest during June and July, when the colouring of their young growths varies from pale-yellow to deep orange-yellow, according to the variety.

The cultural requirements of Golden Yews are similar to those of the other members of the genus, and they need a well-drained, but not dry soil, with a fair amount of manure, not placed too close to the roots. An open and moderately sunny situation is essential to success with these trees, as their colouring is not so pronounced when they are grown in the shade, though partial shade during hot weather is beneficial.

PROPAGATION.

Propagation is effected by cuttings or by grafting; the fastigate, or Irish Yews as they are termed, can easily be raised from cuttings, but the other varieties of Golden Yew need to be grafted on stocks of the common Yew, for though cuttings form roots readily, the plants propagated in this manner do not afterwards grow freely, but remain dwarf and stunted for years. Grafting is performed during February or March under glass. The young plants are placed in a close case in a temperature of 65° to 70°. Fungus is sometimes troublesome, but this trouble can be overcome if the inside of the case is syringed with a strong solution of sulphide of potassium before the plants are placed in the propagator. It is not advisable to syringe when the plants are in the case, as the magdole works its way between the scion and the stock and prevents a proper union. Standards are grafted outdoors, in March, on young, free growing, straight-stemmed plants of either the common or the Irish Yew. Grafting wax should be used to cover the union, as clay is liable to crack and allow the cold, drying winds usually experienced in spring to enter, and thus kill the scion before union is effected. The after treatment of the young plants consists, after they are properly planted in a suitable situation, of keeping them to a single leader in the case of bush plants, and of inducing them to form a well shaped, round head in the case of standards. The Golden varieties of Irish Yews should always be trained to a single leader, and the side growths that appear should be stopped at their points as soon as they have attained a sufficient length. The middle of May is the best time to do this work, trimming the standards over with the shears and using the knife fairly hard on the side growths of pyramidal plants, while any long shoots that appear on the latter during the summer should be pinched back as soon as they are seen. If this be done regularly the growths will become stout and able to withstand any ordinary stress of weather. Irish Yews, both green and golden-leaved, are often seen with from 10 to 20 stems springing from what is practically a common base, and when a heavy fall of snow occurs they are bent and often broken by the weight. These plants show that they have been improperly trained when young.

All the Golden Yews produce seeds nearly as freely as the green forms, and though the seedlings do not resemble the parents entirely, a large proportion will be found to possess variegated or golden leaves, and very pretty forms are sometimes found amongst them. Seedlings of the Golden Irish Yews are intermediate in character between their parent and the Golden English Yew, thus, while the leaf arrangement and the habit of growth is of an upright character, the plants are much bushier and often approach the Golden English variety in size.

VARIETIES OF ORNAMENTAL YEWS.

Varieties of Taxus baccata having coloured foliage are:—

T. B. VAR. ALPRESSA AUREA.—A dwarf growing, spreading plant, and one suitable for planting on a rockery or for training as a standard specimen. The leaves are from a quarter to half-an-inch in length, rather wide, and thick in proportion, and have a narrow green stripe in the centre, with

margins of bright gold. The variety forms a handsome and desirable plant, but is not common in gardens.

T. B. VAR. ALBO-VARIEGATA.—This is a strong and comparatively fast-growing plant, the leaves, each about 1 inch long, being margined with creamy-white. It should not be planted near to the golden forms.

T. B. VAR. AUREA.—The leaves in this form are more than 1 inch in length, and are almost entirely of a bright golden-yellow colour. The plant is of bushy habit, a strong grower, and is to be recommended for planting. The variety aureo-variegata somewhat resembles the one under notice, but has a green stripe in the centre of the leaf and is of a more straggling and less robust habit.

T. B. VAR. AUREA BARRONI.—A variety that originated as a seedling in the Elvaston Nurseries. It has a dwarf, compact habit, with rather short leaves of a distinct bronzy-gold colour, which is especially effective in winter.

T. B. VAR. DOVASTONI AUREO-VARIEGATA forms an excellent plant for a corner of the rockery. The habit of growth is spreading, thus rendering the plant suitable for covering spaces on which a bright-coloured plant is required. The foliage is of a bright yellow colour, that appears pleasing especially when the plant is trained as an informal standard.

T. B. VAR. ELEGANTISSIMA. This is one of the oldest forms of the Golden Yew, and is a strong and vigorous plant of comparatively quick growth. The leaves are about 1 inch in length and are of a pale-yellow colour on their margins, their centres being coloured green. With age this variety makes a handsome specimen, trained either in the bush form or as a standard.

T. B. VAR. WASHINGTONII.—Plants of this variety assume a rounded form, somewhat intermediate in shape between the two last named. The leaves are about 1 inch long, curved, of a greenish-yellow colour in summer, changing to bronze-gold in winter.

THE GOLDEN IRISH YEWS.

T. B. VAR. FASTIGIATA AUREA.—A variety of strong, upright habit, with leaves 1 inch to 1½ inch long, and of a bright yellow colour, with a small patch of green in the centre, at the base. A tree of this handsome Yew is a decided acquisition in any garden.

T. B. VAR. FASTIGIATA AUREO-MARGINATA.—This is the variety sometimes met with under the name of Fisher and Holmes' Golden Irish Yew, and is an upright plant with leaves exceeding 1 inch in length. The foliage is marked with a green stripe in the centre and is margined with gold. A tree of this form has a tendency to grow broader at the top than at the base, for which reason it requires more training than the majority of Golden Yews.

T. B. VAR. FASTIGIATA STANDISHII.—The habit of this variety is very narrow. The foliage is of the brightest golden colour, the colouring being most prominent on the side next the sun. Growth is rather slow in this form, but its rich colour atones for this defect, and it is to be recommended as an upright growing golden-leaved shrub of good constitution.

Yew hedges are best clipped in May, though on young, strong hedges a second light trimming, especially on the top, may be necessary in September. By clipping them fairly hard in May, the plants make a certain amount of growth during the year, sufficient to keep the balance even between the tops and roots. The autumn trimming, if necessary, should be a very light one, and only just sufficient to keep the hedge in shape. *J. C., Bagshot*

MAMMILLARIA RHODANTHA VAR.

THE Mammillarias have either simple, branched or caespitose stems clothed with spine-bearing tubercles, and their flowers are produced in a whorl near the top of the stem. *M. rhodantha* has a sub-cylindric stem from 6 inches to 1 foot high, and it is sometimes forked. The variety here figured is an exceptionally fine example of a cristate or proliferous deviation from the type. It is difficult to account for the occurrence of these crested varieties of Cacti. They are known in most of the genera, from the big *Cereus giganteus* to the smallest, and they appear to be permanent. The best known of them is *Cereus peruvianus monstrosus*, of which there is a large example in the Kew collection. Such monstrosities occur among Cacti in a wild state, so that they cannot be set down to cultural influences. Nor are they likely to be the result of injury to the central growth bud, for the whole plant is

spit deep of good, sound loam should receive this addition at once. The planting of standard Roses should claim the first attention, and these should be followed by dwarf Hybrid Perpetuals, Hybrid Teas, Hybrid Chinas, Bourbons, Teas, &c., also some of the best varieties of the Japanese or Rugosa section, Ayrshire, evergreen, and other climbers. The bushes should be carefully examined at their roots before re-planting, and have all thick, gross-growing roots that usually spring from near the stem removed. Make the bottom of the hole quite firm for the reception of the plant, and carefully spread out all the fibrous roots. A little ballast, grit, and wood ashes, well mixed with the soil, is a great help to newly-planted Roses, and especially if the ground is of a heavy, retentive character. Tender varieties of Teas and Hybrid Teas should not be planted now, but are best left until April and May; they may, however, be planted at this season if some

a space of 3 feet between the rows and 1 inch between the plants. Tread the soil about them, level the ground, and tread well again, so that the soil presses tightly against the stock. When planting is finished, apply a thick mulch of manure.

RAISING ROSE STOCKS.

Hips of the wild Dog Rose, from which Briars are raised, can now be gathered. Mix the fruits with some fine road grit or sand, throw the whole together in a heap, and cover with a thin layer of soil. The fleshy envelop will by this means rot, allowing the seeds to be collected. Sow in drills 3 inches deep during the spring. November is a suitable time to insert cuttings of the De la Grifferie and Manetti stocks. The cuttings should be made about 9 to 12 inches long from firm, ripened wood. In preparing the cuttings all the buds that would be below the ground line should be cut out to prevent a plague of suckers from springing up later in the season. Stretch a line across the border of well-trenched ground and cut in the sloping direction a trench 9 inches to 1 foot deep, throwing the soil back on the bed. Place at the bottom of this opening a quantity of river sand and press the base of the cutting well into this material at about 2 inches apart. Succeeding rows should be 18 inches apart. Place some soil against the cutting and tread this firmly and until the whole surface is level. Established plants of dwarf and seedling Briar, Manettii, and De la Grifferie stocks, that were raised from cuttings inserted last autumn may be set out in the beds for budding, as in the case of the standard Briar stocks. Plant the strongest of them in rows made 3 feet apart and allow 9 inches between the plants in the rows. The De la Grifferie and Seedling Briars should be planted 6 inches deep; the other varieties need not be quite so deep. If the plants are very vigorous and have spreading growths, a little more room than I have stated should be given them both ways. In all cases plant firmly.

ROSES IN POTS.

All Roses in pots plunged outside, except those newly potted, should now be brought under cover of some kind, and be kept dry at their roots but as cool as possible. The plants that were placed under glass during October can now be kept gently growing without any increase of heat, which should range from 50° to 55°. Afford less ventilation, and after damping the walks and the stages, close the house entirely early in the afternoon. If artificial heat is available in houses in which Roses are planted out, the valves of the hot-water pipes should be turned on a little at night-time at the end of the present month. In the meantime gradually reduce the amount of ventilation, and damp down on bright mornings, but admit a little outside air at night.

GRAFTING ROSES UNDER GLASS.

About the middle of November arrangements should be made for grafting under glass, but this early start will be successful only on established stocks of either the Briar, Manettii, or De la Grifferie types that were potted into 60-pots during the spring and afterwards plunged outside all the summer. These stocks are used for the early or dormant grafting from the middle of November until December. Stocks potted up now can be used for herbaceous grafting early in the New Year, for as the season of dormant grafting ends the herbaceous or soft grafting takes its place. The best position in the house for the work is on a thin slate bench over the hot-water pipes, and under glass frames of a sufficient depth movable both back and front, to allow for the growing grafts. The Briar and De la Grifferie stocks should be used in the grafting of Tea, Hybrid Tea, Noisette, China, and hybrid varieties. The Manettii stock is best suited for the Hybrid



FIG. 116.—MAMMILLARIA RHODANTHA VAR.

affected, and cuttings, when rooted, never lose the peculiar habit of growth. A collection of such freaks as this Mammillaria would be interesting, but they would not flower; at any rate, we do not remember to have seen flowers on any of these proliferous Cacti. We are indebted for this photograph to Mr. Juan Balme, Jr., Mexico

THE ROSARY.

CULTURAL NOTES FOR NOVEMBER.

NOVEMBER is an important month in the Rose garden. If the borders and beds were duly trenched and manured in October, they will be in a suitable condition for planting, providing the soil is settled. Planting must be done when the weather is fine and the ground fairly moist without being sticky. All unsuitable soils that have not been improved with a

protection is afforded the plants during severe weather. In transplanting, care must be exercised that the trees be not inserted deeper in the soil than they were before shifting; as a rule, shallow planting is best for Roses providing they are well secured by staking and well mulched. Standard Briars should be planted as early as possible according to the quantity required and the space for their accommodation. The individual plants differ much in their habit of growth and colouring, which ranges from grey, green to black. Plants of the two former colours are the more free in growth, and if their shoots are well ripened make the best stocks; those of a black colour are frequently "hide bound," and success with them is uncertain. These stocks should be planted in ground that has been trenched and manured, placing the roots 9 inches deep in good stiff staple loam. Allow

Perpetual, Bourbon, and other Roses not of the Tea and China class. Tongue or side grafting is usually practised; the stock is cut down to within 3 or 4 inches of the pot, and should be as nearly as possible of the same thickness or a little thicker than the scion. If the scion is smaller, care must be taken to place it so that the two layers of cambium are united on one side at least, or there can be no proper union. The wood of both stock and scion should be well ripened. I have occasionally used soft pithy wood when I was anxious to propagate as many plants as possible of new and scarce varieties, but I do not advise its general adoption unless in expert hands. In new and rare varieties one bud only is allowed to each scion, but when grafts are plentiful two or three buds may be permitted. A layer of ashes or coconut fibre in the frame needs to be kept damp over the hot-water pipes. A temperature of 50° to 55° is sufficient to commence with, and this amount can be gradually increased after Christmas, but the grower must be guided by the weather outside; in any case, the temperature should not, except with solar heat, exceed 60° to 65°. The propagating frames should be kept close the first week or ten days. Care must be taken not to allow excess of moisture to hang about the grafts, and to avoid this the sashes should be opened an hour or two each morning. When a callus forms and growth begins gradually give more air. In about three or four weeks the more forward plants will be ready to take out of the frames and place on a stage well up to the light in the house. As these are taken from the frame, other stocks can be grafted and take their place in the propagator. To counteract the drier atmosphere of the house a light syringe should occasionally be given overhead to the grafted plants. J. D. G.

ORCHID NOTES AND GLEANINGS.

DENDROBIUM APHRODITE.

THIS pretty Burmese Orchid, once plentifully represented in collections as *D. nodatum*, seems to have become rare in gardens. Flowers are sent by Messrs. Jones, Howes & Co., Elmdon Nursery, Kenilworth. The species was originally discovered by the Rev. C. Parish in Moulmein and flowered by Messrs. Hugh Low & Co. in 1862, but it has never been imported in quantity. The pseudo-bulbs, which are 6 to 8 inches long, are swollen at the joints, and are closely arranged in compact tufts. The flowers, which are 2 inches across, are produced singly or in pairs, and are cream-white with a sulphur-yellow disc to the lip and two maroon-coloured blotches at the base. The species should be grown in suspended baskets or Orchid pans and rested in a cool, airy house when not actively growing in winter.

ZYGOPETALUM ROSTRATUM.

THE fine specimen of this rare species which was shown by Messrs. Jas. Cypher & Sons, Exotic Nursery, Queen's Road, Cheltenham, at the Royal Horticultural Society, October 15, well represented the beauties of one of the most distinct and pretty species of the genus. It was awarded a First-Class Certificate at the Temple Show in 1902, the plant being one of the most admired in the fine collection staged by Sir Trevor Lawrence, Bart., on that occasion. The sprays of wax-like flowers, each about 3 inches across, with a large white labellum bearing some purple lines at the base, render it a very attractive species. Being a native of Guiana, it requires to be grown in a warm, moist house, and it is probable that the chief reason of its scarcity in gardens lies in the fact that it has been grown with *Z. maxillare* and other *Zygopetalums* which thrive in a cooler temperature. *Z. rostratum* requires to be watered all the year round, although less water should be given after the season's growth is completed. It does best in teak-wood baskets, suspended near the glass of the roof. J. O'B

GLADIOLUS PRIMULINUS.

ALTHOUGH discovered 20 years ago in the Usagara Mountains of Southern Central Africa, nothing much appears to have been heard of this *Gladiolus* till within the past year or two,

lected and distributed, especially in England. A description of the plant is to be found in the issue of the *Botanical Magazine* for June of last year, and from the particulars given as to its habitat, it is clear that this *Gladiolus*, like



FIG. 117.—GLADIOLUS PRIMULINUS. COLOUR OF FLOWERS, PALE YELLOW.

when, owing no doubt to the opening up of the country, and particularly to the advent of the Cape to Cairo railway at that part of the world where the plant is found, bulbs have been col-

lected and distributed, especially in England. many of the genus, but not all, requires much moisture, for it is described by one of the officials of the British South Africa Company who has seen it growing, as flourishing in one of

the wettest places close to the Victoria Falls, where the atmosphere is nearly always charged with misty vapour.

The shape of the flower is curious and unusual; the upper perianth is seen to be curved right over so as to form a shield or roof over the inside, which is most delicately beautiful, and if it should turn out that the natural habitat of the plant is confined to places where it is subject to the continual wetting of fine spray, such as obtains at the foot of the Victoria Falls, the fact is only one more illustration of the extraordinary way in which nature adapts her flowers to their surroundings.

The tallest plants of the group in my garden are no less than 4 feet high, and have from eight to nine buds or flowers on them. These open regularly though slowly to the topmost bud, which comes into flower about three weeks after the first one, so that the blooming period is unusually long for plants of this genus. The stem is not wiry and twisted, like that of *G. tristis*, but firm and fleshy, as in the case of the German Iris, and rather more than a quarter of an inch in diameter at the ground. The full-sized corms are about as large across as a half-crown, and of rather a stronger colour than the bloom, which is an exquisite Primrose yellow; and while it does not appear possible to say much at present with certainty about the culture, a mixture of granite chippings, charcoal, and coarse sand, with enough peat dust to make the mixture brown, and very free drainage, has, at any rate, answered very well so far in the case of my own plants.

Whether or not this *Gladiolus* will prove to be hardy in Great Britain is doubtless a question which only time can decide; and in this respect it would probably be wise to be on the safe side and treat it like *Gladiolus sulphureus* and others of doubtful hardiness. It is a most beautiful plant, with a singularly attractive habit of growth and refined flower. *G.* [Our correspondent has sent us excellent photographs of the species, but we reproduce a sketch (Fig. 117) of a flower-spike from Mr. Fox's garden at Wimbledon, which has already appeared in these pages.—ED.]

NOTICES OF BOOKS.

THE BOOK OF FRUIT BOTTLING.*

THIS is a book of 97 pages written by two lady experts on the preserving of our common fruits by bottling, drying, and conversion into jam, jelly, &c. A series of papers on the subject by Miss May Crooke appeared in *Farm and Garden* in 1905, and we are told by the authoress, Miss Edith Bradley, that they form the basis of the book. A reprint of an article entitled *Ancient Recipes and Old World Cures*, which appeared in the *Woman's Agricultural Times*, has also been incorporated, by the permission of the writer Mrs. Collier. The hope is expressed by the authoress that the publication of the practical details of these industries may be instrumental in arousing greater interest in them among all living in country districts, and that county councils may follow the example set by Worcester a few years ago, and devote some money to fostering this work.

The formation of co-operative societies to work small fruit-preserving manufactories in a few of the best fruit-growing districts, aided by support from the county councils, seems the most desirable method of setting to work. That co-operative fruit culture and fruit-preserving as a remunerative industry would be helpful in keeping the rural population on the land there is very little doubt. As we all remember, "jam" was one of Gladstone's remedies for rural depopulation. The Rev. W. Wilks, Vicar of Shirley and secretary

of the Royal Horticultural Society, writes a very sympathetic introduction to the book.

He is old enough, he says, to be able to see back very clearly to the late forties and early fifties of the last century. It was the beginning of the decadence of housekeeping. The elder folk of those days were true housewives and were teaching the younger ones, but many of these were already beginning to shirk. Every country house at that time had its store room, and bottled its own fruits, made its own jams, dried its own Cherries, and so forth. The ladies of those days did not think it beneath them, or too much trouble, to see to this department themselves.

Our appliances are much superior to those of that time, for there were only awkwardly shaped bottles, a fish kettle, haybands, and raw bladder, but generally speaking the fruit was preserved in abundance and failures were few. Mr. Wilks thinks that the influence of the R.H.S. among public bodies, and the exertions of Miss Bradley and Miss Crooke have done something in reviving the art.

There are full directions for bottling fruits by the aid of steam as a steriliser, viz., the Wytenbach (German), the Mercia, used in the West of England, and Fowler's or Lee's patent economic steam cooker, forms of bottles, jars, and steam-pans being shown in photographic reproductions. Various close estimates of cost of utensils, and of bottles and jars, and the ordinary selling prices of products are supplied. General directions are given for jam-making; all the old directions for grading the fruit, gathering whilst in a dry state, the quantity of sugar to be made use of, cleansing, the kinds of boiling pans to be used, and the best places for storage being clearly given. The making of fruit jellies is reduced to a certainty, Red Currant, Black Currant, Apple, Crab and Grape jelly being brought fully under notice. It is a pity that Guava and Pineapple are not included among preserved fruits, though they be not English hardy fruits. Marmalades from Oranges, Rhubarb, and Tomatos, both ripe and green, are fully explained as to the making: as are home-made wines, fruit drying, vegetable desiccation, and cider making.

THE BRITISH BEE-KEEPER'S GUIDE BOOK.*

THOSE who can recall the publication of the *Guide Book* of Mr. Cowan in 1881, will remember what pleasure and profit was derived therefrom. Since then much advance has been made in apiculture and appliances, and the most advanced in the art will find a new pleasure in perusing and closely studying the nineteenth edition recently issued. The illustrations, from photographs, will prove interesting and instructive.

The chapter on natural history is concisely and simply stated, and can leave no doubt in the mind of the beginner about the development of bees; while the illustrations of broodcomb and queen cells leave nothing to be desired.

The beekeeper who is of a mechanical turn of mind will be interested in Chapter VIII., where all the details of hive making are set forth, and, at the same time, he will do well to study the chapter on comb foundation very closely.

To handle and subdue bees with success, the hints in Chapter XIX. will prove useful, and help to bring about a race of beekeepers who can work in an apiary successfully without setting the whole of the bees in an uproar.

Some beekeepers would be prepared to sell swarms and stocks if they could only make sure of packing them safely. In the chapter, "Moving Bees," most minute details are given, and success is certain if the methods described are adopted. The advanced apiarist will find invaluable hints on the most advanced lines, on queen-rearing, nucleus hives and introducing queens; and all could materially assist in stamping out disease by a close study of the diseases common among bees.

In many districts there are great quantities of bees destroyed annually over the brimstone

pit, which might be utilised with advantage by the more advanced beekeepers if they only knew how to carry them home. Bellairs' method described in Chapter XXXII., is an excellent one, and I can strongly recommend it. *Chloris*.

THE ROCK GARDEN.

AUTUMN-FLOWERING SAXIFRAGAS.

As a whole, the members of this genus are usually associated with spring-flowering plants; but there are two or three species which do not flower until autumn. Of a different habit from all other Saxifragas, these, together with the well-known *S. sarmentosa*, form a distinct section of the family, and are all natives of China and Japan. Of the two now in flower,

S. FORTUNEI has been longest in cultivation having been introduced from Japan by the traveller after whom it is named, and it flowered in the nursery of Mr. Standish at Bagshot in the autumn of 1863. The reniform-cordate leaves are lobed and laciniately toothed, and are produced on stout petioles. They form a rosette from which arise the stout stems, bearing panicles of pure white flowers. These flowers are remarkable for the unequal petals, one or more of which exceed in length by two or three times all the others. The petals, which vary in length from $\frac{1}{4}$ to 1 inch, are unequally serrated or saw edged. Although hardy in a somewhat sheltered and shady position, it is seen at its best when grown in a pot in a cold frame, where it flowers profusely. Closely resembling this is

S. CORTUSÆFOLIA (*Bot. Mag.*, t. 6,680), which is also in flower, and which differs chiefly in having entire petals. These, like those of the latter, are of unequal length, and somewhat narrow, but the flowers are very freely produced on much branched panicles, making quite an elegant plant with the many-lobed reniform leaves. This species was introduced by Messrs. Veitch in 1883, having been found by their collector, Mr. Maries, on the central mountains of Japan, at an elevation of 2,000 to 7,000 feet. Like *S. Fortunei*, it is also found in China, and varies to a great extent. Broadly speaking, these two plants may well be two extreme forms of one species, as they are of the same habit, and flourish under similar conditions. They do not produce much if any seed when grown out of doors, but may be freely propagated by means of dividing the crowns. The fourth species belonging to this set is *S. cuscuteformis*, which may be described as a miniature *S. sarmentosa*.

BENNINGHAUSENIA ALBIFLORA.

This Himalayan plant has been in cultivation since 1823, but is rarely seen in gardens. Its elegant habit and numerous small white flowers produced in September and October should recommend it for more general favour. It is a slender, erect-growing perennial about 2 feet high, with branching stems, two or three pinnate, Rue-like, glaucous leaves, and nodding, pure white flowers in abundance. It is in flower in a sheltered, half-shady position in the rock-garden. Belonging to the Rue family, it is also known as *Ruta albi-flora*.

SAXIFRAGA GEMMIPARA.

This species from the Province of Yunnan, in China, was introduced by Messrs. Bees, Ltd. of Neston, in 1905. It is more nearly allied to the aizoides set of the genus, and possesses similarly-arranged, but much broader leaves, which are $\frac{1}{2}$ to $\frac{3}{4}$ inch long, and $\frac{1}{4}$ inch wide, and are thickly set with long hairs. It is of tufted habit, only 1 inch or 2 high, and bears white flowers about $\frac{1}{2}$ inch in diameter, with prominent orange-coloured stamens. It appears to be rather tender, requiring the shelter of a cold frame. *W. Z.*

THE COUNTRY GARDEN.

At the autumn, and again at the spring-planting, it is important to give due consideration to the need for a liberal proportion of plants that produce a bold distinct effect. In some cases it may be produced by large-sized handsome flowers; in others the characteristic boldness may belong more especially to the foliage, whilst in other species, flowers and foliage alike are strikingly effective. These several characteristics make for a definite decorative effect, and distinct decorative value—value and effect that tell at a considerable distance.

The larger the garden the bolder should be the planting—this would seem to be an obvious truism, but it is far too frequently neglected, and the result is seen in the indefinite and indistinct effects, combined with a sense of monotony and tameness, that sometimes run throughout the whole garden. Supposing we realise the need for planting bold, handsome subjects, to a considerable extent, it is well to go a degree further, and see to it that we establish them in positions and amid surroundings that accentuate these characteristics as much as possible. A very careful selection of the places they are to occupy should be made, bearing in

Pampas Grass, Yuccas, and Phormium, when grown to perfection and used to the utmost advantage, all rank high as bold and striking subjects, and to them should be added the beautiful, but not hardy, *Agapanthus umbellatus*. A glance through these names will show that the flowering periods of one and another cover many months, so that each may, with a little care as to site and surroundings, become a feature of beauty in its own season. Each should be planted in a position that ensures its being in full view from a considerable distance. These and such as these are the things that are distinct and bold enough to carry well. Better to see them far from us, and thus approach them, than to come upon them suddenly round a corner, or in the bend of pathway where their full value, from a distance, as well as from a nearer view, cannot be properly appreciated.

It is difficult to find a more effective subject than the herbaceous *Pæonies* where there is ample space available; in small gardens they must be barred because of the brief duration of the flower, but there is this much to be said, they do not need the most open situations the garden affords; the good old-fashioned crimson varieties flower quite satisfactorily under partial shade, so that they make

as an edging, produces a grand bit of colouring, wonderfully effective, and I have in my mind a most successful treatment of a dry slope—*Clematis* was planted at the bottom and trained over it—a spring display of colour being produced by an under planting of bulbous subjects. It is difficult, I think, to over-estimate the value of this particular tone of blue in a large garden and in a sunny position, and where there is space it might well be used as freely and generously as is the *Crimson Rambler*, and nothing yields this colour in the same effect as *C. Jackmanii*. *Practical Gardener*.

HEERIA ELEGANS.

AMONGST the number of greenhouse plants of a trailing habit, and which are suitable for pans for edging the stages, or as basket plants, this species is valuable. It grows only a few inches in height, and has trailing, wiry stems, which branch freely, and bear small, opposite, green leaves. The blade of the leaf is about half an inch in length, of an ovate, lanceolate shape, slightly serrated at the margins, around which small, whitish hairs appear springing from the serrations. The petioles are reddish and about one-eighth of an inch long. The flowers are produced terminally on peduncles, about 1 inch in length, on the numerous short side branches, which just raises them above the level of the foliage, while in diameter they are about 1 and $\frac{1}{2}$ inch. A description of the species is given in *Linnaea*, 1839, p. 432, and it is there described as resembling in colour and magnitude the blooms of *Geranium sanguineum*; but as grown here, the colour appears brighter and of a more pleasing shade. The coloured stamens are conspicuous with their white anthers. The fruits are very hairy, turn to a reddish colour with age, and produce an abundance of seed, from which plants may be easily raised, or they may be obtained by cuttings, which have the habit of making roots quickly. The cuttings should be placed in well-drained pans in a mixture of good, fibrous loam and peat. In the southern counties of England *Heeria elegans* should prove a good summer bedding plant, as a plant put out into the "Order" beds this summer here flowered freely, and for a long period; indeed, for its long duration of bloom, the species is only surpassed by few plants having a similar habit. *Schizocentron elegans* is the name under which this melastomaceous plant is sometimes known, Mexico being its native habitat. The photograph reproduced at Fig. 118 illustrates four plants grown here. R. L. Harrow, Royal Botanic Garden, Edinburgh.



FIG. 118.—HEERIA ELEGANS, A TRAILING GREENHOUSE PLANT.

mind that a bold and important subject would gain much by having an important position, just as it would lose by being placed in some half-hidden and inferior spot. These bold subjects may be led up to by subjects of vaguer and more indefinite appearance (I have in mind the effect from a distance), but they should never be half-hidden by them. They should catch the eye, and more than that, they should hold it at different points of vantage. In this way, and perhaps only in this way, can we achieve the charm which comes with character, individuality, and distinctness—qualities that go to make beautiful gardens. So far as possible, where it is a question of establishing new subjects of bold and handsome habit, it is well to select the positions they shall occupy while still the leaves are upon the trees.

To consider a few of the subjects that readily come to mind as especially effective when made the most of, and are hardy, and of easy cultivation, there should, at as many different seasons as possible, be this succession of bold plants at the height of their beauty in one or another of the points of vantage in the garden. *Pæonies*, *Hydrangeas*, *Heaclemum*, the shrubby *Syringas*, *Clematis*,

grand plants to fringe the pathway of a bit of garden woodland. Some of the newer herbaceous varieties are very beautiful, especially the pale tender shades, *Kelway's Queen*, for instance, a soft pale pink; *Glory of Somerset*, a little deeper; *Maria Kelway*, bluish suffused yellow. *Pæonies* are sufficiently hardy even to stand the winters of North-Western Canada. The tree varieties are, perhaps, even more valuable from the decorative point of view, and here again the choice is large enough to be bewildering, but *Weisse*, *Belle de Monza*, *M. Jules Orban*, and *Javii* are excellent.

Well-grown *Hydrangeas* are hard to beat, whether cultivated in tubs or in the open ground. This year I have noticed *Hydrangeas* tend more than usual to blue tints, and a broad pathway between raised borders largely planted with them, with tubs of *Agapanthus* at intervals, made one of the best effects I have seen this year as a foil to more vivid colouring in close juxtaposition. The *Hydrangeas* were of some seasons' growth, and carried a mass of blossom.

A raised bed with one of the well-known blue *Clematis Jackmanii*, trained to wires about 1 foot above the soil, either covering the bed entirely or

FLORISTS' FLOWERS.

EARLY-FLOWERING CHRYSANTHEMUMS.

APART from the usefulness of the early-flowering varieties of *Chrysanthemums* for furnishing a supply of cut flowers, they brighten the herbaceous garden at a time when the permanent occupants of the borders are becoming past their best season of flowering. For the amateur cultivator, and the cottager especially, these early-flowering *Chrysanthemums* are especially valuable. Now that their season of flowering is with us, the opportunity should be taken of noting the best varieties for next year's planting, and in order to assist in this, I have compiled the following list of varieties as being especially suitable for the flower garden:—*Carmalite* has flowers of the deepest shade of golden yellow; the habit of growth is stiff, free in flowering, and useful for any purpose: height 2 feet. *Carrie* is also a yellow-coloured variety, but the flowers are smaller than those of *Carmalite*: the plant attains to a height of 2 feet. *Clara*, the deep orange-yellow flowers of this variety are produced in plenty on shoots 2 feet 6 inches high. *Comtesse Foucher de Cariel* forms a broad,

bush-like plant 2 feet in height, bearing flowers of an orange-bronze shade. Hector, the rich mauve-pink blossoms of this variety, borne on long, stiff stems, have drooping florets, and it is one of the best Chrysanthemums for early-flowering; the height is 3 feet 6 inches. Harrie, the flowers of this variety assume an orange or a bronze tint, according to the season of flowering: the height of the flowering shoots is 2 feet. Goacher's Crimson, this well-known variety grows 2 feet 6 inches in height and has bright crimson flowers. Fred Goacher has creamy-white flowers that are tinted with rose. The plant is free and erect in growth, reaching to a height of 2 feet. Ethel Blades has medium-sized blooms of a bright crimson colour; height, 2 feet. Diana, the flowers of this variety are coloured a deep orange-bronze shaded with gold, the plant is 2 feet 6 inches in height. Perle Chatillonnaise grows fully a yard high; its flowers possess, when opening, a delicate rose-coloured centre on a creamy-white ground. This variety is to be specially recommended for planting. Nina Blick, a variety having flowers of a reddish-bronze tint; the height is 2 feet 6 inches. Perle Rose is of a stiff, erect habit of growth, the colour of the flowers is a pearly-pink and the growths reach 2 feet in height. Mrs. A. Thomas has small flowers of a deep golden-yellow colour, on stem 2 feet 6 inches long. Le Pactole has shapely, bronzy-yellow incurving flowers. The habit of growth is somewhat tall, usually 3 feet. Lillie, the flowers of this pretty variety are pearl-pink, the height is 2 feet. Polly, the earliest flowers of this variety are of the shade known as amber, but this colour passes to orange in the older flowers. Wells' Masse is a pale bluish-coloured sport from the lilac-mauve Mdme. Marie Massie, and is a most desirable variety for planting. Tapis de Neige produces its pure-white flat-shaped flowers in profusion. The height of this variety is also 2 feet. Roi des Blancs is one of the best of the white varieties; the flowering shoots reach 2 feet 6 inches in height. Wells' Scarlet is especially free in flowering, and the colour being a pleasing shade of scarlet terra-cotta; it is a most valuable subject for the herbaceous border, and its height is not more than 1 foot 6 inches. Rosie has rich terra-cotta flowers, the height is 2 feet. Horace Martin is a variety extensively cultivated by market-growers on account of its freedom of flowering, the deep yellow-coloured flowers are tinged with bronze; the height is 2 feet 6 inches. Le Cygne, bears its pure white flowers on long, stiff stems that are 3 feet in length. *E. Melyneux.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Vandas.—The tall growing Vanda tricolor, V. suavis and their several distinct varieties, should now receive attention. Every leaf should be carefully sponged, so as to effect a clearance of all dirt and insect pests, particularly the small brown scale which adheres very firmly on both the upper and the under surfaces of the leaves. Great care must be exercised in the removal of this scale so as not to damage the leaves; the XL-All liquid preparation is to be recommended for this work, for after sponging the leaves with this insecticide, the insects may be easily detached by a thin, smooth piece of wood. Give the foliage a thorough washing with clean, tepid, soft water after the work is finished. From now till the middle of November is the best time for re-potting or re-surfacing these plants: the loss of foliage consequent on the disturbance of the roots being much less at this season than when the work is performed in the spring. Any plant which has become bare for some distance up the stem through the loss of its older leaves should have its potting material carefully removed in order to sever a portion of the stem. The plant may then be placed lower in the pot with as little breakage or cracking of the roots as possible, and some of the longest aerial roots may also be brought within the receptacle. Previous to re-potting, place a sufficiently strong stake in position to support the plant in an erect manner. Replace the drainage, work in amongst the roots some clean crocks and fresh sphagnum-moss, press-

ing the whole firmly. Finish to within half an inch of the rim of the pot, surfacing the whole with a conical layer of clean, freshly-gathered sphagnum-moss. When the operation is completed, stand the plants upon a cool, moist stage in the Cattleya-house where they can be conveniently shaded from the sun. Afford no water to the plants until several days have passed, after which it should be copiously applied. The moss on the surface will soon become dry again, but must be kept in a growing condition by the use of a fine sprayer. Beyond this light spraying no further waterings will be necessary.

The intermediate house.—The night temperature should now range between 55° and 60°. Plants of Cypripedium insigne and its varieties, also numerous cool-growing hybrids, are sending up their flower-spikes, and these should be carefully guided up past the strong growing leaves. This remark also applies to the pure white Masdevallia tovarensis. The pretty Oncidium cheiroporum should now be carefully watered: if this plant be kept in too moist a condition at the roots, the small flower buds are liable to decay. The inflorescences are growing rapidly, therefore suspend the plant at the warmest end of the house in a light position, for a little extra sunshine at this stage will be of benefit.

The cool house.—Plants of Odontoglossum crispum and others that were re-potted or top-dressed last month are now making considerable progress in growth. Those which are rooting freely will require copious waterings whenever the compost becomes moderately dry. The quantity of water should be gradually increased as the new pseudo-bulbs commence to form, and the flower-spikes begin to push up. Keep the temperature of the house at night-time from 50° to 55°, according to the weather outside; afford as much fresh air as is possible, but carefully avoid cold draughts, especially when the weather is cold and the winds boisterous.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq., Latchell Park, Kent.

Stove and greenhouse climbers.—All the light it is possible to get in plant-houses being necessary for the welfare of the plants during the dull, winter months, the climbing plants should be overhauled, carefully thinning out all superfluous growths and cutting back the old flowering shoots. Allamandas (unless grown under a special treatment) will now be past their best, and the roots will not require nearly so much water, but merely sufficient during the resting period to keep the wood firm. In no case should the water supply be withheld suddenly, it being necessary to reduce the quantity gradually, according to the requirements of the individual plant; the situation in which the plant is growing will largely determine the amount required. Plants growing in a border, for instance, will require less than is necessary for specimen plants in pots or tubs. Clerodendrons require a similar resting period to Allamandas, and if in movable receptacles they should be taken from the plant stove and placed in a drier atmosphere the temperature of which will not fall below 55 degrees during the winter. Many of the greenhouse climbers that do not require a perfect resting period, at the same time need moderate rest that is not enforced by drying off the roots severely. Tacsonias and plants of similar growth being practically evergreen can only be thinned as recommended above. Severe pruning must be deferred till growth becomes active in spring. Much less water will be required by all the species than was given them in the summer months, but each plant should be carefully studied, as no hard-and-fast rule will be applicable to all the species.

Cyclamen.—The more forward plants will now be developing their flower-stems, and if they are cultivated in frames during the summer no time should now be lost in transferring the plants to a light house, arranging them thinly on the stages as near to the roof-glass as possible. Have the house thoroughly washed before housing the plants, and take advantage when handling these latter to apply a little top-dressing of approved manure, taking care not to allow any of the manure to lodge in the crowns. Fumigate occasionally, and keep the atmosphere of the house

at a temperature of 50° at night, rising to 55° during the day, admitting a little air at all times when the climatic conditions out-of-doors are favourable.

Forcing plants.—Where a quantity of flowering plants is required in the middle of winter, preparations should now be made for obtaining the supply. Probably a certain amount of stock is already available, but any that it is necessary to procure from the nurseryman should be ordered without delay. Rhododendrons [Azaleas] of all kinds, indica, Ghent, and the mollis \times sinensis are indispensable, also Lilacs, Prunus triloba, Spiræas, &c. When these plants are unpacked, any that show signs of extreme dryness at the root should be plunged in a pail of water and allowed to drain again before being potted. Plunge the pots in ashes out-of-doors, and introduce a batch of plants into heat at intervals as required, starting them gently in such a degree of warmth as would be obtained in a vinery or Peach-house which has just been shaded.

THE KITCHEN GARDEN.

By WILLIAM H. HUNESS, Gardener to C. COMBE, Esq., Cobham Park, Surrey.

Asparagus.—Plants that are intended to supply crowns for forcing and were therefore cut from but lightly, will be sure to mature their growth and become ripened well in advance of those beds that provided the main supply. As soon as such early plants are thoroughly "ripe," the growths should be cleared off the ground, together with all weeds that may be present. As much of the surface dressing as possible should be raked off, leaving just sufficient to protect the plants from the drying influence of the wind, but removing sufficient to cause the crowns to feel the full effects of any frosts that we may experience before it is necessary to lift the roots for forcing. It should be remembered that Asparagus is capable of withstanding a considerable amount of frost without injury, and, as with most other vegetables, so with Asparagus, if the plants can be subjected to some extreme influence, such as that of frost, they will afterwards be capable of responding the more readily to the influence of heat. For the first batch or two an ordinary hotbed of litter and leaves should be used in preference to artificial heat. The heat obtainable from a hotbed is quite sufficient, and seems to suit the plants, for the "Grass" is better in both flavour and size than when fire-heat is applied. As the winter advances, however, and the inclemency of the weather increases, it will become necessary to employ fire-heat. As the young growths commence to advance, admit all the light possible, in order to obtain the best colour and delicate flavour in the Asparagus, rather than cultivate it in darkness, which results in white, weakly, and often tasteless produce. If blanched Asparagus is requested, however, then the gardener must, of course, provide it. Beds that afforded produce until the end of the season will be later in ripening, and not until the growths are actually shrivelled should they be cut from the plants. When, however, this condition is reached, take and clear the tops, rubbish, and all weeds from the ground and afford a liberal mulch with well-decayed manure.

Horse-radish.—Although one plantation is often allowed to stand for several seasons, the roots from beds made annually or every other year are much to be preferred to those that are allowed to stand for a longer time. Where it is intended to make a fresh plantation, this work should now be undertaken. The plants in the existing bed should be lifted and the roots of serviceable size selected and laid out in a convenient place ready for use in the kitchen throughout the winter. The smaller ones, about 3 inches in length with a crown, should be reserved as sets for the new bed, and all pieces, however small, should be closely looked for and removed, as these would all start into growth and give much trouble next year. The ground to be planted should be trenched quite 2 feet in depth, manure being placed at the bottom only, and the sets should be placed from 18 inches to 2 feet below the surface. As this work can be done in the autumn, it should not be delayed, for if done now it will be one the less operation demanding time and labour during the first few months of the new year.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. Ford, Lelchittow, Cornwall.

The Lawn.—Towards the end of the autumn the use of heavy horse-machines for grass-cutting should be discontinued, and the necessary mowing be done with the lighter hand mowers; the ground at this season is soft, and unsightly marks are often made by the horses' feet and the rollers of the mower when making short turns. After the final cutting the machines should be thoroughly overhauled; if repairs or the renewal of any of their parts are needed, they should be sent to the makers at once rather than wait until just before the mowing commences next season. Any machines which are in good order should be taken to pieces, cleaned, and well oiled; when put together again they should be stored under a covering in a dry shed or barn. This work may be performed on a wet day.

Lawns should be regularly rolled with a light roller, choosing favourable weather for the operation. If there are any deciduous trees on or near the lawns, the turf will require to be swept daily. The removal of fallen leaves entails a considerable amount of labour at this season, especially in the flower-garden, around the mansion, and along the principal walks. In the wilder parts of the garden leaf-strewn walks are in keeping with the season and surroundings, and have a great charm to many people. The collected leaves should on no account be burnt, for although the ash is of value, decayed leaves, in the form of leaf-mould is much more so. Any leaves which are not required for the regular store should be placed in heaps conveniently near to where they are collected. A few branches of Laurel or Silver Fir laid across the heaps will prevent the leaves from becoming blown away; the extra store of leaf-mould so obtained is sure to be of much value sooner or later.

Gales and storms are frequent and destructive at this time of the year. Immediately the storm has abated all available labour should be set at work to remove its traces as quickly as possible. The flower-beds and herbaceous borders should receive the first attention and next the lawns and the walks. Catch-pits should now be frequently cleared. The gravel on steep paths is often washed to the lower parts during a storm and this should be replaced. The removal of gravel from paths by storm-water can be largely prevented by fixing slates or slabs of stone edgeways at frequent intervals at the sides of the path. Splintered limbs of trees should be removed with a slanting cut as near to the main trunk as possible, and the cut surface be afterwards coated with tar to prevent the entry of fungoid diseases and water, and also to render the cut surface less conspicuous.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq., Norwood, Alloa, Clackmannanshire.

Tomatoes.—Plants intended for fruiting in winter will now be well advanced, and should be tied carefully to the trellis, rubbing out all lateral growths, and pinching out the point of the leader as soon as it reaches the top of the stake or trellis. Cut back each long leaf to half its length, and thus expose the fruit and flowers to the sunlight. A warm free-circulating atmosphere should be maintained in the houses, in order that the flowers may become fertilised. Fumigate at regular intervals if the white fly (*Aleyrodes*) is troublesome. At this dull season, when the days are shortening more and more, it is essential to maintain a good, steady heat in the water pipes. A little air may be admitted through the top ventilator during the day, and at night also. The atmospheric temperature by day should be 70°, and at night 65°. Be extra careful in affording water to the plants, never applying it unless the roots are dry. Manure water may be afforded once each week. Tomato plants for potting in spring should now have filled their 3-inch pots with roots, and be cultivated in a cool, well-ventilated position close to the glass. Endeavour to obtain sturdy, short-jointed plants that will withstand the winter and remain in good condition.

Cucumbers.—The plants cultivated for fruiting during winter and spring should be growing rapidly. Tie in the shoots regularly to the

trellis, and pinch them so as to have a good expansion of foliage throughout the house before the winter sets in, after which the plants will be unable to make much growth. Discontinue syringing, but maintain the atmosphere in a humid condition by damping the paths. Admit a little air when the weather is clear, and dry by the top ventilator only, always closing the house with sunheat if possible. Attend to the pollinating of the female flowers as soon as they open. This is done by taking a male flower, and, after removing the petals, placing it in the centre of the female flower, which can easily be known by the embryo fruit behind it. A warm, dry atmosphere is essential immediately after this operation has been carried out. A steady heat of about 70° at night and 75° to 80° by day, or more with sunheat, will suit them. A bottom heat of 65° to 70° is also required. Be very careful not to apply too much water to the roots, but, at the same time, never allow the plants to flag for want of sufficient moisture. If insects are troublesome, fumigate with the XL-All vaporiser.

Pot vines.—Whether these have been raised from "eyes" or are cut-back plants which were placed out-of-doors to mature their wood, they should now be placed under glass, or, at the least, be protected from heavy rains. Those required for forcing early should now be pruned, leaving the rods at a length of from 4 to 5 feet, according to the strength of the canes and the trellis or space to be allotted them. Be careful to cleanse the canes thoroughly with Gishurst Compound, especially if red spider has been prevalent. Take care that in using the brush near to the buds no damage is inflicted upon them. Afterwards place the vines in the coldest house obtainable until it is time to remove them to the forcing-house, when reference will again be made to the subject.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to Lord Clinton, Brighton, East Devon.

Medlars.—Most old gardens contain one or more trees of Medlar, the fruits of which are useful for making into jelly. Medlars should not be gathered much earlier than this date, otherwise they will shrivel instead of ripening, which takes place three or four weeks after they are stored. Place the fruits thinly on a cool, airy shelf, with the "eye" downwards, for when decay occurs in this fruit it usually commences at the stalk. This decay may be largely prevented by dipping the stalk in brine, but even when this precaution is taken the fruits should be examined occasionally, and bad ones removed. Some persons prefer this fruit uncooked, in which case only the largest and the ripest fruits should be selected.

Hardy fruits.—All Apples, Pears, and Plums should now be gathered. Of the latter, Coe's Golden Drop, and Reine Claude de Bayay may be kept for several weeks if they are carefully gathered and placed in a moderately dry room. Belle de Septembre is a good late culinary Plum, and will hang well into October if the tree be planted on a north aspect. Another good late Plum is Wyedale, a market variety. None of these late Plums are fast growers, but they are sure croppers.

Fruit-tree borders.—To be successful with wall trees, especially those of stone fruits, the proper preparation of the border is of the utmost importance, and where planting is contemplated this should be undertaken without delay. Even where the soil is naturally drained sufficiently, it is advisable to insert a layer of from 6 to 9 inches of broken brickbats, stones, or clinkers, at the bottom of the trench, as the roots of the trees are thereby kept warm during winter and early spring. Good fruits can be grown upon a border 2 feet 6 inches deep over the drainage material on comparatively light soils, whilst 2 feet is of ample depth in the case of a cold and retentive loam. It is usual to make the borders as wide as the wall is high, but a space of 6 feet will be sufficient, providing no other crops are grown upon the border. If it is considered necessary to drain the border, a 3-inch pipe, placed some 6 inches below the rubble, and near to the front of the border, will suffice to carry off the superfluous water which must have a fall as well as an outlet. Cover the drainage material with

turfes, placed grass-side downwards, to prevent the finer soil choking the drainage. The compost should consist of two-thirds best turfy loam and about one-third of ordinary garden soil, mixed with a quantity of mortar rubble or old plaster pounded to about the size of Walnuts; in the case of retentive loams, it may be necessary to add some pieces of broken bricks of the size of hen eggs. Wood-ash is a splendid material to add to soil for any kind of fruit tree, more especially when it is heavy, for the heavier the soil the greater is the necessity for adding materials that will give porosity to the whole. The compost should be moderately dry when it is used, for it must be made quite firm in the borders by treading or ramming. Peaches, Nectarines, Apricots, Figs, and dessert varieties of Plums should be planted against the warmest walls.

PUBLIC PARKS AND GARDENS.

By W. W. PETHIGREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

Pruning and lopping street trees.—The method adopted in many towns of pruning and lopping street trees often gives rise to much adverse criticism. It would appear sometimes as if the average householder regards himself as an expert upon such matters, and what he fails to see a reason for he forthwith condemns in the local Press. Even horticultural papers often denounce the prevalent style of pruning and lopping street-trees, regarding the question from a purely arboricultural standpoint without taking into consideration the peculiar circumstances leading to the adoption of the methods complained of. No responsible park official would attempt to treat a tree in an open space as he would one growing in a crowded thoroughfare. Trees are so entirely out of their natural surroundings in a public street that the treatment that has to be accorded to them is correspondingly unnatural. It simply resolves itself into a question as to whether, in many localities, trees are to be thus dealt with or whether they are to be removed altogether.

A great deal of the annual mutilation of street-trees could undoubtedly be prevented if more suitable species and varieties were utilised for planting. Trees of a fastigiate type are more suitable for street-decoration than those of a spreading character. Where there is much vehicular traffic, branches spreading over the roads become not merely a nuisance, but a menace to public safety. Even in the more secluded streets in the residential parts of towns, where trees have greater freedom to develop their growth, their branches require every now and again to be thinned out and the lower limbs gradually removed to produce a clean trunk.

The Plane.—Few trees tolerate severe pruning better than the Plane. However hard it may be cut back in the winter it produces strong, healthy shoots during the following growing season, which retain their large, glossy foliage till well into November. Planes are grown in the busiest parts of numerous cities, where other trees less amenable to the knife could not possibly be grown. In such places they have to be pruned every year.

Other species.—The Black Poplar and the English Elm also bear rigorous pruning very well. The Birch, Mop-headed Acacia (*Robinia*), and Maple do not as a rule need either much cutting back or thinning out. In the case of the Maple, when pruning is necessary, it should be done as soon as possible after the leaves fall, as the sap begins to rise in most of the Maples very early in the year.

Large specimens.—In addition to the pruning of medium-sized trees, it often becomes expedient to lop off the head and branches of any large trees that may be growing in close proximity to the footpaths and public highways in towns. To witness beautiful trees—usually Elms—treated in this manner invariably arouses much sentimental indignation upon the part of the public. As several fatal accidents have recently occurred through branches falling upon people in parks and highways, the opposition to lopping trees in towns is not so strong as it was a few years ago. When the lopping is done carefully and the cuts properly dressed, the trees regain their beauty in the course of a year or two.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, OCTOBER 28—
Nat. Chrys. Soc. Floral Com. meet.
TUESDAY, OCTOBER 29—
Roy. Hort. Soc. Coms. meet.
Brit. Gard. Assoc. Ex. Council meet.
Croydon Chrys. Show (2 days).
WEDNESDAY, OCTOBER 30—
Kent County Chrys. Soc. Exh. at Blackheath (2 days).
Streatham and Dist. Hort. Society's Autumn Show (2 days).
THURSDAY, OCTOBER 31—
West London Hort. Society's Show at Hammersmith.
FRIDAY, NOVEMBER 1—
Annual Dinner of the Unit. Hort. Ben. & Prov. Soc. at Holborn Restaurant.
Battersea, Clapham & Wandsworth Amateur Chrys. Sh. (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—47.

LOCAL TEMPERATURES—
LONDON.—Wednesday, October 23 (6 P.M.): Max. 56°, Min. 49°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, October 24 (10 A.M.): Bar. 29.8, Temp. 50. Weather—Overcast.

PROVINCES.—Wednesday, October 23 (6 P.M.): Max. 56°, England, N.E.; Min. 47°, Barrow.

SALES FOR THE ENSUING WEEK.

MONDAY AND TUESDAY—
Nursery Stock at Arthurs Bridge Nursery, Woking, by order of Messrs. W. Spooner & Sons, by Protheroe & Morris, at 12.
MONDAY AND WEDNESDAY—
Sale of Dutch Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.
MONDAY TO FRIDAY—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.
WEDNESDAY—
Roses at 1.30; Japanese Lilliums, Miscellaneous Bulbs, &c., at 3; Palms and Plants, Azaleas, Rhododendrons, &c., at 5; at 67 and 68, Cheapside, E.C., by Protheroe & Morris.
Nursery Stock in variety at Tivoli Nurseries, Hollington, Hastings, by order of Mr. T. Relfe, by Protheroe & Morris, at 12.
Shrubs, Ornamental Trees, &c., at Shortlands Nursery, Shortlands, Kent, by order of Mr. J. B. Bryant, by Protheroe & Morris, at 11.
THURSDAY—
Nursery stock, including Paul Crampe Geraniums, at Northfield Nursery, Putney Bridge Road, Wandsworth, S.W., by order of Messrs. Fordham & Co., by Protheroe & Morris, at 12.
Carnations, Roses, and other stock at Hassocks Nurseries, Hassocks, Sussex, by order of Mr. H. Elliott, by Protheroe & Morris, at 12.30.
FRIDAY—
Odontoglossum, crispum and Orchids in variety, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.
Third Annual Sale of Nursery Stock, at Bellingham Nursery, Bromley Road, Catford, by order of Messrs. J. Laing & Sons, by Messrs. Protheroe & Morris, at 12.

The Discussion on Summer Pruning.

The results of the discussion on Summer Pruning held at the Scientific Committee of the Horticultural Society, which we print in another column, suffice to show how great is the need for careful and systematic experiments on this important subject. Not only are the questions raised of great scientific interest, but they involve matters of no small importance to the practical man who wants to secure the largest possible returns of marketable fruit from the area he cultivates.

Some months ago we gave the results of an enquiry as to the benefits or the reverse to be expected from summer pruning, and the opinions expressed by our correspondents turned out to be very conflicting. This divergence of views was again emphasised in the meeting last week, and it is clear that the principles underlying the treatment are not

as yet understood, and that we have not got beyond the first stage of collecting the facts. What we want to arrive at is a true conception of the nature of the causes which determine whether a given bud shall give rise to a wood or to a fruit bud. We want a scientific, that is, a genuine, explanation of the matter; for only in this way can we hope to replace the empirical statements of the present time by a comprehensive knowledge of the relation between fruitfulness and the nutrition (in the widest sense) of the tree. Then we shall be able to look forward to gaining control over these functions in a rational manner, and to diverting exuberant vegetative activity into channels of fruitfulness, as far, at least, as the plant can economically bear it.

It must be understood that the problem thus stated is one of vast biological and economic importance, and we are not likely to arrive at its solution until we have accumulated a mass of data drawn from carefully-devised experiments. Everyone thinks he can make an experiment, and yet very few people have any clear idea of what an experiment really is. Properly speaking, it resolves itself into a definite question put to nature, to which we expect to get a definite reply. And we may be quite sure of one thing—that the answer returned will always be a true one, though it may not be the one we either expect or desire. When, as in the present instance, the answers seem confused or contradictory, the fault lies with us. We are unwittingly asking not one, but many, questions all at once, and the worst of it is that we do not even realise what some of them are! It is small wonder then that we cannot disentangle the one reply we want from the number that we get.

It may be quite true that in a particular place, and under the special conditions prevailing there, the operation of summer pruning may prove to be beneficial, but the fact that in other localities and under other conditions an opposite result is arrived at, only serves to show that we have as yet failed to accumulate sufficient or properly-analysed data.

There is a generally-expressed opinion amongst those who speak with practical knowledge, that there exists a balance between the different organs of the tree which, when properly struck, leads to fruitfulness. The balance may be reached naturally, and without external interference, or it may require artificial adjustment. And here we seem to find outlined the difficulties which are unavoidably felt as soon as an attempt is made to reconcile the conflicting statements of the experts.

This is certainly not the time, nor is it, perhaps, the place, to enter on a full discussion of the results that have so far been collected, but it will not be useless to endeavour to glance at one aspect of the complex problem involved in an explanation of the results of pruning. We are, of course, primarily interested in the operation only so far as the production of fruit is affected; the secondary results of shaping the tree, admission of light into its interior, and other such matters do not now concern us.

It is often asserted that the vegetative and reproductive developments are antagonistic to each other, and that by curbing the vegeta-

tive growth the organism is forced into reproductive activity.

The statement is only partly true, and perhaps not at all true in the sense in which it is generally made. It would be more correct to say that the reproductive process is complementary to the vegetative, and is conditioned by, or produced as the result of, a special kind of vegetative activity. In a general way it would appear that the fruiting capacity is stimulated by any cause which tends to the sudden utilisation of the elaborated organic food within the plant, whilst at the same time the rate of construction of that food from raw materials is depressed. This is what, in effect, is commonly brought about by curtailing the rate of absorption of water and the salts therein dissolved. Thus, when the strong, deep-running roots of an Apricot or Apple tree are severed, there is an immediate check in the supply of raw material to the plant. The surface roots are constantly exposed to more variable conditions, which in their turn affect the rate of absorption of water and salts, and in this way a number of more or less definite, if slight, intermittent checks are given to the plant.

When the leaf surface in proportion to the total available root area is large, perhaps similar checks may arise in other ways, as, for example, in the relatively inadequate supply of water to provide for periods of excessive evaporation, or, as it is often called, transpiration, in the case of Apples grafted on Paradise stocks.

Now, this balance between root absorption and the loss of water by the leaves has been the subject of much investigation, but it has never been sufficiently examined from the point of view that interests us just now. The subject is a large one, and needs a full and careful investigation in relation to the nutritional changes that proceed within the plant. It is, we believe, quite certain that a research conducted on such lines would yield results capable of being turned to practical account.

It is not unlikely that the balance of water-supply to the constructive activity of the leaves may prove to be a factor of principal importance in determining whether a tree should be pruned, pinched, or let alone, in the summer. Many circumstances however, will obviously have to be taken into account in estimating the probable result of a particular mode of treatment. For example, with an active root system the buds of a pruned branch will be more likely to break into leaf than if it had been merely bent or twisted, for in the latter case, although the channels of the water may have been partially blocked by the injury, they will not have been completely destroyed. The excess of water can be eliminated by the leaves above the wound, whilst they, in their turn, are still able to contribute to the manufacture of the elaborated organic food, and hence to its accumulation within the branch.

We desire further information as to the exact stage at which the destiny of a lateral bud is determined as regards its future development, as well as on the nature of those early changes which are associated with the development of wood and fruit buds respectively.

A consideration of the above points—and they form only a very small part of those that

could be raised will suffice to show the urgent need for further enquiries, and we are glad to see that the matter is attracting the attention of those whose interest it should be to see that it is fully investigated.

The Fruit Show.

It is a satisfactory circumstance that the Council of the Royal Horticultural Society appears now to regard the holding of a great and representative exhibition of British-grown fruits as one of its annual responsibilities, the recent exhibition being the fourteenth held under the Society's auspices. At the very least, these displays help to keep the public mind informed as to the character of the hardy fruits that are grown in these Islands, and they certainly impart a dignity to the industry of fruit cultivation that would otherwise be lacking. We think, however, that they go further than this, for they are of some value to fruit-cultivators themselves, whether such cultivators are engaged in the occupation for the purpose of supplying their own needs, or for the production of fruits as a means of livelihood. It may reasonably be supposed that many of the visitors to the show are less experienced than the practised exhibitors, and it is useful for them to study the varieties of Apples, Pears, Plums, or Peaches, that are selected for display in the various classes, because the specimens afford an illustration of the type of fruit generally considered to be most perfect.

In the "County" classes, where the competition is confined to one or more counties, in order that the growers in such areas may be enabled to compete with each other on more or less equal terms, it may generally be seen what varieties succeed best in each district, and the prospective cultivator can obtain information as to the suitability of a county for commercial fruit-growing by studying the quality of the fruit that particular county furnishes to the general display. In the market growers' division the inexperienced may usually gather valuable hints as to the best systems of packing fruit for transit to market, which is one of the most necessary lessons that have to be learned if the undertaking is to be remunerative. So much is this the case that the classes in this division might be advantageously increased in number, and the former classes for specially demonstrating systems of packing should be revived. It would be advisable to offer liberal prizes for exhibits which would illustrate some novel or improved method of marketing, or satisfactory appliance or system for grading the fruits.

The exhibitions do not in any degree show the processes connected with fruit-growing, fruit-gathering, or fruit-preserving. At the dairy exhibitions, or even Tobacco exhibitions, the authorities not only offer to visitors an inspection of the finished product, but they go to elaborate pains to provide object-lessons in the various stages of the manufacture of the milk or cream into cheese or butter, and of the raw Tobacco into commercial samples. In order that the annual exhibitions of fruit may serve the purposes that are desirable, it is essential that the general public should be induced to visit them. There is much room for improvement in this respect. Although the attendance on

the first day was considerable, we fear that if all the exhibitors and their assistants, together with professional gardeners and nurserymen, were excluded, it would be found that the public was but poorly represented. There are two directions in which efforts might be made to attract the public, and the first is by having practical demonstrations of the processes that are employed either in connection with fruit-culture or the conserving of fruits by evaporation, bottling or other means; or even by the manufacture of cider or perry. The other means would lie in making the displays of fruit more effective from the spectacular point of view. "Granted that the individual fruits shown in the competitive classes, and by the nurserymen, are of such excellent quality as to excite admiration and, in a measure, satisfy our ambition, at the same time they are shown in such a manner as to indicate that not the least trouble is taken to obtain an exhibition-like effect. It is incredible that our exhibitors and exhibition authorities are incapable of doing things better than they are carried out at present. This recent exhibition, like all its predecessors, was most uninspiring if viewed in the aggregate, with its table after table laden with Apples and Pears, almost devoid of relief. It cannot seriously be argued that the sight could interest many who are not specialists, or who have not a considerable knowledge of the varieties exhibited.

We have in our mind an exhibition in which the same fruits with their good qualities unimpaired would be arranged for the production of spectacular effect, as the French and Belgians are in the habit of arranging their floral shows. The schedule, for instance, might encourage cultivators to exhibit a greater number of orchard house fruit trees in pots, for what could be more effective than the beautiful specimens abundantly furnished with choice fruits, such as are usually exhibited by the firms of Bunyard and Rivers? With a greater number of such trees, and a suitably constructed central stage, a magnificent and tall group could be arranged in the centre of the hall that would at once serve to arrest the eye of the visitor immediately upon entering the building, and break the monotony that at present extends from the one end to the other. The nurserymen's exhibits on table spaces of specified dimensions would lose nothing in value if each were arranged on a plan totally different from that of adjacent exhibits, and the show itself would gain immeasurably in effect, and thereby in interest to the casual visitor. These are matters which must be left to the Society's council, and we trust that at no very distant time the arrangements for our fruit shows will be conceived and carried out on a very different basis than at present. Since the erection of the new hall, our artists have on several occasions photographed the displays of fruit, but in no single instance, up to the present, has the resultant picture been one that could have been published in these pages with any degree of pride or satisfaction.

In spite of all this, we freely acknowledge that the effect of the shows upon fruit-growers themselves is one that should not be despised. They are powerful incentives to strive for the best results. The visitor who is very proud of his own specimens of Cox's

Orange Pippin, or Lord Derby Apples, or some variety of Pear, Grape, or other fruit, discovers that they are very moderate if compared with the best fruits that others have obtained, and he determines to make greater efforts in the future. All this tends for good, and should be encouraged by every means possible.

We need not refer in detail to the show, especially as a full report is published on supplementary pages to this issue. The effects of the season on the fruit crops were fully set forth in the tabulated returns published in the issue for August 3, and in the remarks from our correspondents subsequently. Apples, although less than an average crop, boomed pretty largely at the show, and in size appeared to be as large as ever, but the skins had failed to develop the high colour that is characteristic of certain varieties in a more sunny season. Pears were as numerous and as good in quality as they are generally seen, and Plums and Peaches were abundant, whilst Nectarines were few owing to the lateness of the season. Grapes were generally up to or better than the average at the R.H.S. shows, and a bunch of Muscat of Alexandria shown by the Earl of Harrington, had it exhibited rather better colour, would have been a perfect specimen.

The judges at such shows have an onerous task to perform, and they deserve every consideration that can be given them. A difficult point presented itself in the judging of the two best collections of indoor fruit shown in the class for nine dishes. These collections were nearly similar in point-value, but doubts were raised as to the identity of a white Grape in one of the exhibits that was labelled Muscat of Alexandria. Upon tasting it, the judges were convinced it was not a Muscat, and the exhibit was probably placed in the second place from this circumstance. Throughout the first day, one or another tasted a berry until one of the two bunches had been consumed, and the other commenced. Some held with the judges that the Grape was misnamed, and others were decidedly of the opposite opinion. No one in the meantime had been able to suggest another name for the variety, assuming it was not a Muscat. We ourselves thought its appearance was that of a Muscat, allowing that the berries were a trifle shorter and more rounded than usual, but upon tasting a berry we were perfectly unable to detect any Muscat flavour, although the texture of the flesh was quite that characteristic of a Muscat. On visiting the show on the second day, we were informed that the matter had been definitely settled by the discovery that the Grape was none other than Charlestown Tokay, which, it was alleged, had been shown to the Fruit Committee many years ago; this name had been therefore boldly placed upon the exhibit. On looking the matter up, however, we find that the late Dr. Hogg, who doubtless took considerable trouble to establish the identity of varieties, has stated in the *Fruit Manual* that Charlestown Tokay is synonymous with Muscat of Alexandria, and the same opinion is expressed in the late Mr. Barron's *Vines and Vine Culture*! It would appear, therefore, that the judges even now may not have settled the point conclusively.

OUR SUPPLEMENTARY ILLUSTRATION affords a glimpse of the enclosed garden around the Church of St. Paul, Rome, as seen from the Cloisters, which are amongst the most notable in the world. The tall standard trees seen through the arches are of the Citrus family. Mr. JAMES HUDSON, of Gunnersbury House Gardens, who obligingly furnished us with the photograph from which our picture was prepared, states that these are chiefly Oranges and Lemons, and that these trees thrive better in this garden than at any other place in, or around, Rome. The shelter they obtain from the church protects them during March from the wintry blasts which blow for a few weeks over Rome. The original Church of St. Paul, otherwise "San Paolo fuori le Mura," i.e., St. Paul outside of the walls, was burned down in 1823. The present structure is not yet completed. Note in the picture the great diversity in the sculpture of the columns, which is beautifully executed.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will be held on Tuesday, October 29, in the Vincent Square hall, Westminster. At a meeting in the afternoon a lecture on "The Birds of Our Gardens" will be delivered by Mr. CECIL HOOPER, M.R.A.C., F.S.I.

FRUITS IN SEASON.—From Mr. GEO. TAYLOR, Byram Gardens, Ferrybridge, Yorkshire, we have received a bunch of Grape Cornichon Blanc, a variety brought into prominence by our valued correspondent, Dr. BONAVIA, Worthing, and from whose gardens Mr. TAYLOR received his stock. A bunch of this curiously-berried Grape was figured in the issue for October 8, 1904, p. 251, from a photograph supplied us by Dr. BONAVIA.

MR. J. HOWES.—Orchid growers will be interested to know that Mr. J. HOWES, who so successfully cultivated the fine collection of Orchids belonging to Mr. WALTER COBB, and later that of Mr. WHATELY, has commenced business as a nurseryman, with a speciality in Orchids, in partnership with Mr. JONES. The firm is Messrs. JONES, HOWES & Co., Elmdon Nursery, Kenilworth.

VISITS TO FOREIGN STATIONS.—The New Zealand Department of Agriculture has recently published a Bulletin (No. 17) dealing with the methods of fruit growing and marketing as practised in California. Mr. BOUCHER, Government Pomologist, was sent on a special mission to find out for the benefit of the Colonial growers what is being done in this great fruit district of America, and the information contained in his report cannot fail to be of great service to them. This practice of seeing what others are doing is one that we might, with great advantage, adopt more extensively ourselves. But it should, of course, be remembered that visits of this kind are mainly useful in so far as they enlarge our knowledge and appreciation of the complex conditions that determine the results of agricultural operations. It is not likely that a transplanting of purely Californian, or any other methods, without reference to the prevalent local conditions at home, will prove at all advantageous. The real and great benefit resulting from such visits lies in those habits of mental alertness and the readiness to grasp suggestions which may lead to improvements that are stimulated by a wise inspection of "how they do it abroad." But it is a waste of money to send any but men trained to habits of investigation on such errands, and they ought, if possible, to be already equipped with a practical knowledge of the business before them. Such persons are best able to bring discriminating intelligence to bear on the new conditions, and hence are most likely to yield, in the form of helpful suggestion to those at home, a maximum return for the expenditure necessarily incurred.

BRITISH GARDENER'S SUCCESS IN AMERICA.—At the recent flower show in Mineola, U.S.A., a special diploma was awarded for a group of plants staged by Mr. HENRY TURNER, gardener to HOWARD GOULD, Esq., Castlegould, Port Washington. Mr. TURNER was appointed gardener to Mr. GOULD in March, 1906, being previously foreman at Burghley House, Stamford, and at Luton Hoo, Luton.

NURSERY EMPLOYEES' UNION.—We understand that a Nursery Employees' Union has been formed. The secretary's address is 56, Totteridge Road, Enfield Wash, London, N.

OUR TREES, AND HOW TO KNOW THEM, is the title of a new book by Mr. FRANCIS GEORGE HEATH. It will include about 200 illustrations, and will be published by the Country Press of Kensington.

THE PARIS CHRYSANTHEMUM SHOW.—This annual gathering will take place in the greenhouses of the Cours la Reine from November 8 to 13. There are few finer sites for a flower show anywhere, and the Paris show ranks as one of the most brilliant exhibitions of the flower in Europe. The schedule comprises 101 classes, of which 75 are for Chrysanthemums, and the others are for Cyclamen, Carnations, Orchids, &c. Fruit is always staged in abundance, and the general artistic arrangement of the show is a sight well worth a visit. Special interest centres on the exhibits of novelties for which important prizes are offered for competition among the raisers of seedling varieties.

BULLETIN DE LA SOCIÉTÉ FRANÇAISE D'HORTICULTURE DE LONDRES (66, Long Acre, London, W.C.).—We welcome once again the appearance of this interesting annual volume, which will meet with a ready acceptance by the ever-increasing number of the Society's members. For the eighteenth year in succession the Society, under the guidance of its president, Mr. GEO. SCHNEIDER, has annually rendered an account of its raison d'être, which is amply justified. The objects are now too well known to be recapitulated here, and in briefly reviewing the contents of the present issue, we may say that it has for a frontispiece an excellent photograph of M. LAGEAT, who presided at the Society's annual dinner last January. Then follow the rules and lists of members of various grades, the reports of the monthly meetings, financial statement, library catalogue, &c. There are some nicely-executed photo-engravings of views in the Congo at intervals throughout the book. The remainder of the volume consists of the text of various papers read by the members at meetings of the Society. A few titles will suffice to show the scope of these, viz., "Tomato Culture," "Begonia Gloire de Lorraine," "Aralias," "Exotic Fruits Grown on the Mediterranean Coast," "The Dahlia," "The Sparrow," "Cultivation of Witloof," &c.

Publications Received.—*The Flower Garden*, by T. W. Sanders; published by W. H. L. Collingridge.—*Two Legs, and Other Stories*, by Carl Lwala, published by Methuen & Co.—*My Rock Garden*, by Reginald Farrer; published by Mr. Edward Arnold.

THE DESTRUCTIVE INSECTS AND PESTS ACTS, 1877 AND 1907.

It is certainly a matter for regret that the fears expressed by horticulturists with reference to their position under the Destructive Insects and Pests Act 1907 should so speedily have proved to be well founded. It will be recollected that the Act in question conferred upon the Board of Agriculture and Fisheries power to take steps for preventing the introduction into, or spreading in, Great Britain of any insect, fungus, or other pest destructive to agricultural or horticultural crops or to trees or bushes, and for this purpose to exercise powers similar to those already vested in the Board under the

Destructive Insects Act 1877 for dealing with the Colorado beetle. The powers conferred on the Board of Agriculture included the right to order the removal or destruction of any crop or substance on which these pests, in any stage of existence, might be found, or to or by means of which it might be likely to spread. There is, however, this important distinction between the Acts of 1877 and 1907; in the former Act the Board of Agriculture may direct the local authority to pay compensation on the following scale for any crop officially destroyed under the exercise of these powers: (a) In case of a crop on which the insect may be actually found, the compensation is not to exceed half of the value of the crop; (b) in any other cases the compensation is not to exceed three-fourths of the value of the crop. Under the Act of 1907, however, the position is wholly altered, as it is expressly provided that the payment of compensation by any local authority for the removal or destruction of any crop or any trees or bushes is to depend entirely on whether or not the local authority chooses to charge itself with such payment.

The position of the horticulturist thus created would be farcical if it were not of such vital importance to those who are thus at the mercy of the new Act. It being left entirely to the discretion of the local authority whether the local authority itself shall or shall not pay compensation to a grower whose crops, trees, or bushes may have been destroyed in the public interest, it is not very surprising to find that payment is now promptly refused, such being the experience which the growers in the Evesham district have recently undergone.

It is stated that the chairman of the Worcestershire County Council justified the refusal on the ground that the Gooseberry bushes lately destroyed by order of the Board of Agriculture were already infected with the American Gooseberry-mildew, and suggested that in the analogous case of swine fever, compensation is not given in respect of swine destroyed while actually suffering from the disease. The learned chairman, if correctly reported, appears to have been labouring under some misapprehension, as the Diseases of Animals Act 1894 expressly directs that animals affected with the cattle plague, pleuro-pneumonia, foot-and-mouth disease, swine fever, &c., may be slaughtered, and that the Board *shall* pay compensation to the owner at the rates therein mentioned, that is to say, in some cases three-fourths, and in other cases one-half of the value of the animal immediately before it became so affected. However, what is fair and reasonable in the case of the agriculturist evidently does not apply when the horticulturist is the victim. It was pointed out in these columns a few months ago, that when it comes to imposing burdens, as in the case of the Workmen's Compensation Act 1900, for instance, Parliament does not forget to provide that the term "agriculture" shall be deemed to include "horticulture," but that when it is a matter of extending benefits such, for instance, as those conferred by the Agricultural Holdings Acts, nurserymen, at all events, are altogether ignored.

When the Destructive Insects Act of the present year was before Parliament, strong protest was raised on behalf of nurserymen and market gardeners against their being left at the mercy of the local authorities on the subject of compensation. The Board of Agriculture, however, considered it urgently necessary to get the Bill through the House before Parliament rose, so that the long-delayed powers for dealing with pests destructive to vegetable life might be ready to hand, and urged that if compensation were to be made compulsory the Bill would assume a controversial aspect and might be crowded out, no suggestion apparently being made that the principle of compensation was in any way inequitable. The Board of Agriculture now have their desired powers, and it would be interesting to know whether they are taking steps to bring forward a supplemental Bill, providing that a grower whose stock-in-trade is compulsorily destroyed shall have meted out to him the same measure of justice as the cattle breeder. If not, what is the justification for inaction?

A further somewhat curious anomaly is to be found in the fact that in the case of cattle compensation is paid out of funds provided by Parliament, whereas compensation directed to

be paid under the Destructive Insects Act 1877 had to be borne by the local authority. It is certainly difficult to justify this distinction; in each case the Board of Agriculture takes certain steps for the public benefit, and each matter is of general, and not local, importance. It is true that in the case of diseases of animals the Board of Agriculture might direct payment of compensation by local authorities out of the local rate where the disease is other than cattle plague (a case in point being the Glanders or Farcy Order of 1907), but it is noteworthy that even in this case the payment of compensation is compulsory. Furthermore, it is especially instructive to note at the present moment that the Board of Agriculture has recently addressed a circular letter to local authorities in Great Britain informing them that before making this new Glanders Order the Board laid before the Treasury Commissioners representations that the cost of compensation, or a substantial portion thereof, should be made a charge upon money provided by Parliament instead of being borne by the local authorities, and the Board proceeds to express its regret that their Lordships had found themselves unable to sanction these proposals, mainly owing to the special wording of Section 19 of the Diseases of Animals Act 1894. Is it too much to hope that the Board of Agriculture may feel equal regret if compulsory compensation out of Parliamentary funds should not speedily be authorised by the legislature in the case of those market gardeners and nurserymen whose stock-in-trade the Board may feel compelled to destroy in the public interest?

During the past few months the Board of Agriculture has on more than one occasion protested that its interest in horticulture is at least as great as in agriculture, and now that the opportunity of supplementing verbal assurances by speedy action has arisen, growers of all classes will await with interest the action of the Government department which is expressly deputed to watch over and protect their industry.

Meanwhile the expert grower may take comfort in the fact that he even he is not wholly deprived of statutory protection in other respects. He should bear in mind that if, by chance, infectious disease should attack his household, and the destruction of a few articles of clothing be ordered with a view to avoiding the spread of infection, he will be entitled, as a member of the public, to demand compensation on no niggardly scale! And if the unreasonable fellow be not satisfied with such privileges as these, if he grows weary of waiting for the extension to his own class of those elementary principles of justice which are at present enjoyed by the agriculturist in respect of his live stock, if he fears lest at any moment his stock-in-trade, representing years of labour and scientific study, as well as a considerable proportion of his invested capital, may be officially destroyed without the right to demand compensation of any kind, there is at all events one way of escape open to him. Let him abandon horticulture—and keep pigs! His right to compensation will then be undeniable. *H. Morgan Veitch.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

AMERICAN BLIGHT ON APPLE TREE ROOTS.—Why does R. say that I wrote in "so light a strain" on this subject? I did nothing of the kind. I simply gave the results of my own experience. I have an immense amount of trouble with American blight on young Apple trees and stocks above ground, but hardly any on the roots. The almost complete immunity I attribute to the extreme care exercised in dressing the trees and stocks, and doing it very frequently. If I find any blight on the ground level or on a sucker just under the ground, I thoroughly soak the soil around the tree or stock with paraffin emulsion, preferring to kill it rather than let it live, if I cannot cure the blight upon it. As for R.'s other pure assumption of my "limited experience," I have been a grower of hardy fruit nearly all my adult life, which is not a short one. As to methylated spirit killing many a young tree, I doubt the

statement, unless it has been used in extreme and unnecessary profusion, as I have used it extensively without doing any damage. Paraffin, or, as R. calls it, "petroleum," on the other hand, is about the most deadly of all dressings commonly used, and many persons use it neat and recommend it publicly in this form. *A Working Grower.*

FASHIONS IN FLOWER-GARDENING.—I was much pleased with the excellent leader in the issue of the 12th inst. upon this important subject, and sincerely trust that the suggestions put forward may bear fruit. Undoubtedly the tendency in the great majority of summer bedding arrangements in these days is to dullness, where there ought to be brightness and character. So many hard things have been said in the past about "blazes" of colour in the flower garden, that the pendulum of fashion—I cannot say taste, as this still seems to favour brightness—has swung to the other extreme. As was pertinently remarked in the article I have mentioned, it would appear from many of the bedding arrangements now in vogue as if gardeners were afraid of giving the slightest cause for their being suspected of ever having had a predilection for masses of colour in their flower gardens. In public grounds, where visitors are not as a rule permitted to approach very near to the flower-beds, these have to be furnished in such a manner as to produce a good effect from a distance. Under these circumstances it is especially important that showy, floriferous plants should predominate, rather than those whose decorative value merely lies in their foliage or general outline. The attitude shown towards the vexed question of carpet bedding will commend itself to most gardeners, especially when you state that you think the fewer examples of this kind of bedding exhibited in a garden "the better." *H. W. Pottgrose, Superintendent of Public Parks, Cardiff.*

THE DROPMORE VARIETY OF ANCHUSA ITALICA (see p. 282).—I was at Dropmore for seven years with Mr. Chas. Herrin, and he was always of the opinion that this form of *Anchusa italica* was given to his predecessor, Mr. Philip Frost, by Mr. Hubbard, who for many years had charge of the neighbouring gardens at Blythwood. During the dozen or so of years Mr. Herrin was in charge of the Dropmore Gardens he propagated it and gave freely of this plant to anyone who expressed a wish for it, so that at one time, though not named, it was widely grown. *A. C. Bartlett.*

CUPRESSUS LUSITANICA (CEDAR OF GOA).—Some years ago a young specimen of this species was planted by Mr. Marks, the late gardener at Hardwick House, Bury St. Edmunds. When I had the pleasure of visiting these well-cared-for gardens in 1905 the tree was about 6 feet in height, and had evidently made considerable growth during that and the previous season. It would be interesting to know if the plant survived the rather severe weather of last January. In Veitch's *Manual of Conifera* a tree is recorded as "over 35 feet in height, in perfect health and vigour, growing in the grounds of Mr. Thomas Acton, Kilmacurragh, in the county of Wicklow." Two other reputedly tender varieties, growing in the pinetum here, and which somewhat resemble *C. lusitanica*, viz., *C. Bentharii*, and its var. *Nightiana*, came through last winter quite uninjured. *J. Comber, Nymans Garden, Handcross, Cranley, Sussex.*

BLACK SCAB OR WARTY DISEASE OF POTATOS.—I have just investigated a very severe outbreak of Black Scab in Potatos upon about a dozen allotment gardens near Carlisle, and have also had information regarding it from another centre. The disease was first reported in this country from Cheshire and the neighbourhood of Liverpool, about 1901, although it had formerly been observed attacking Beetroot in the grounds of the School of Agriculture at Rouba, near Algiers. During 1901-2 it was very fully investigated at Kew and at the Armstrong College. This disease, which is the work of the fungus *Chrysophlyctis endobiotica*, causes large warty excrescences to protrude from the "eyes" of the Potato tubers; these outgrowths are, in some cases, quite as large as the tuber itself, and may even entirely surround it. In general appearance the attack much resembles that of

the well-known "finger and toe" of Turnips; indeed, the resemblance does not end here, for it has also much of the virulence of the latter's attack, and the soil may be infected for some years to come. Regarding this, Professor Potter, of the Armstrong College, who investigated the disease in 1901, in an interesting account of his experiments with this disease, published in the 9th volume of the *Journal of the Board of Agriculture*, writes: "The parasite can thus be propagated by means of spores in the soil, and when once it has been established, can maintain itself over the winter and infect the crop in succeeding years." The attack is, therefore, one requiring very prompt attention. Wherever there is reason to suspect an attack, the following preventive measures should be taken: (1) Burn all diseased tops and tubers; (2) be careful not to plant diseased sets; (3) do not sow Beetroot on infected land as this crop is also liable and may carry the attack on to another year; (4) if at all possible, do not plant Potatos on infected land for the space of two years; where this is not practicable, then about the middle of February dress the infected area with gaslime, at the rate of 1 lb. to the square yard, leaving this dressing on the surface of the land until the beginning of April, when it may be dug in and a crop planted. The gaslime is ineffective if applied in the autumn, as the winter resting spores of the parasite are covered by very thick coats, but as the spores germinate in the spring, the tender mycelium is readily destroyed by an application at that time. Quicklime may be applied shortly before planting at the rate of 1 lb. to the square yard, but this is said to be less effective than gaslime. The Board of Agriculture have recently published a leaflet on the disease, which may be had on application at the offices of the Board, 4, Whitehall Place, London. *J. G. Murray, Lecturer in Horticulture, Armstrong College, Newcastle-upon-Tyne.* [The disease was illustrated in these pages on October 28, 1905, under the name of *Oedomyces leproides*.—Ed.]

SOCIETIES.

ROYAL HORTICULTURAL.

SUMMER PRUNING.

OCTOBER 15.—A discussion on the "Summer Pruning of Fruit Trees" took place before the Scientific Committee of the R.H.S. on the above date.

The Chairman, Mr. A. E. Bowles, in introducing the subject for discussion, pointed out that the subject of summer pruning of fruit trees is one upon which there is much difference of opinion and much variety of practice among fruit growers. It, therefore, becomes important to collate the experience of the practical grower and the results obtained by those who have made the matter a subject of careful experiment, in order that a rational system of procedure may be laid down for the benefit of the fruit-growing industry in the country, and that those points which are still obscure may be defined so that they may the better be made a matter for future experiment. The principal points upon which it seems desirable to obtain evidence are, the bearing upon the question of the form of the tree dealt with, the nature of the stock upon which it is grafted, the nature of the root system developed, the nature of the variety, the method of pruning adopted in the winter, the age of the tree, the character of the soil, and the character of the season both before and after the pruning is done.

Mr. H. Somers Rivers said: Whether an Apple or Pear tree be summer and winter pruned, or winter pruned only, makes not a particle of difference, as far as I can see, to the buds at the base of the current year's shoots. They are not changed from long into dwarf shoot producers, because the shoot on which they are borne has been shortened a few weeks earlier or later.

Summer pruning is beneficial because it lets the light and air into a tree, exposing the fruit to the evening dews and the summer sun, enabling it to develop its full colour and beauty. The root system and branch system are closely correlated, and in their mutual relations the former is the dominant partner.

By using dwarfing stocks which develop a multitude of small, fibrous roots, we obtain trees with a diminished growth vigour and a corresponding increase of dwarf shoots. Root pruning has the same object and effect. Fed by the roots of the sturdy Crab or Pear stock, the Apple or Pear builds up a larger framework, and the tree devotes its energies more or less to this until its vegetative vigour slackens and it has attained its full size. An old orchard standard is usually somewhat like an open umbrella, boughs and branches answering to the supports and ribs, leaves and fruits to the silk envelope, each of the latter exposed as fully as possible to the light.

Nature summer prunes. In a cold, sunless period, aphides multiply amazingly, especially on the shoot tips. The tree cannot grow away from them. They curl up the leaves, reducing their breathing and shade area; they appropriate to themselves the sap which the tree sends up for the further development of the shoots and leaves.

Ordinary summer pruning makes the trees in a garden look neater, and, as has been said before, lets in the light and air to the fruit. It is possible there may be a result something analogous to root-pruning in the suppression of so many leaves, and the ensuing check to, or, rather, diversion of, the activities of the tree. This could no doubt be ascertained by direct experiment during a number of years.

With Peaches and Nectarines, which bear their fruits along shoots the year after they have been formed, the case is different. These trees are always necessarily subjected to a much more artificial treatment than the hardier fruit trees. For them, too, we have, as yet, no dwarfing stocks.

The shoots must be stopped; the buds behind this point then get the benefit of the food which would otherwise be employed in the lengthening of the shoot.

Mr. Spencer Pickering, F.R.S., Director of the Woburn Experimental Fruit Farm, said: Such remarks as I may make in contribution to the discussion on this subject must be prefaced by the statement that it is a subject on which no very complete experiments have yet been made at Woburn, and it is one, therefore, on which I wish to speak with considerable diffidence. It is true that two or three of our experimental plots of 18 bush Apple trees each have been subjected to summer pruning for the last 13 years, but two or three experiments were quite inadequate for any complete examination of the subject; whilst other more extensive experiments have not been in progress long enough to admit of any conclusions being drawn from them. The results, however, which have been obtained at the farm on the subject of pruning in general are calculated to throw some light on the more special question of summer pruning.

One of the general conclusions from our pruning experiments, which have been dealt with at length in the Seventh Report,* is that in opposition to the popular opinion on the subject, the pruning of a healthy growing tree results in a diminution of the amount of new wood formed as unnatural, either by the increase in size or weight of the tree, or by the length or weight of the new shoots. The harder the pruning the greater is this diminution: as compared with moderately pruned trees, those which had been continuously hard pruned were nearly 20 per cent. smaller, whereas those which were left unpruned were about 20 per cent. larger. It certainly cannot be a matter of surprise that the removal of any essential portion of an organism should, under normal conditions, result in a check to the natural growth of that organism, and this check should be all the greater if the part is removed whilst it is still functioning actively, i.e., if the pruning is practised in summer. Such evidence as exists indicates that this is so, and shows that pruning in summer checks the growth of the tree much more than pruning at any other time of the year. The experiments which illustrate this point most clearly are some in which very hard pruning, or cutting back, was done on similar trees at different times in the year (see Seventh Report, p. 37). Trees cut back at various dates during the dormant season, November to April, all behaved similarly as

regards their subsequent growth, but when cut back in summer (the middle of July), the amount of growth made by the end of the season was only one-fifth of that of the other trees; and the evil effects were not confined to the one season only, for in the succeeding season these trees still produced only three-quarters of the wood produced by those which had been cut back during the dormant season, and they were otherwise deficient in health and vigour. Cutting back quite early in the summer (middle of May) produced similar, but much less serious, results. Other experiments on cutting back young, freshly-planted trees are leading to like conclusions, but the actual figures cannot yet be given.

Ample evidence has been brought forward in our Seventh Report to show that branch pruning generally, when done in autumn, is inimical to heavy cropping, but it does not follow that this will be so with summer pruning; indeed, the object of summer pruning is to increase cropping, and on account of the check produced by it on wood formation, it is easy to see that such a result should, or may, follow. The removal of a portion of any shoot which is in a state of activity will divert the flow of sap to the buds on that portion of the shoot left, and these, in consequence, will start developing. This development may take one of two directions: it may proceed only sufficiently far to nourish the dormant buds and convert them into future fruit buds, or it may proceed far enough to force the buds into growth. The latter effect is, of course, the reverse of what is desired, since it will result in the formation of numerous small shoots, which will not have time to ripen and will have to be cut away in the following autumn.

Whether summer pruning will bring about the desirable or the undesirable result would appear to depend on so many circumstances that any general statement in the matter, or the prediction of the event, would seem to be an impossibility, and this would account for the diversity of opinion which is held on the subject. Clearly the vigour with which a tree is growing at the time will determine whether the buds at the base of the shoots will be forced into activity or not, and the vigour of growth depends on many things: on the variety of the tree dealt with, the nature of its root stock, and the age and character of the individual tree; also on the position and sturdiness of the branch pruned, the extent to which the pruning has been carried, and the time at which the pruning has been done, as well as on the condition as to moisture of the soil in which the tree is growing, and the character of the weather following the operation. This last circumstance, above all others, would appear to render the results of summer pruning uncertain, even in the hands of the most skilful.

It would seem that the summer pruning of any shoots which are growing vigorously should be avoided, if the object in view is the formation of fruit buds, and the operation, therefore, should be confined to the weaker shoots, which will generally be side shoots: such pruning is more appropriately termed summer pinching, and, as it is desirable to have the fruit spurs as near the base of the shoots as possible, it seems clear that the pinching should be close, leaving not more than three or four buds on the shoot, for it is only the buds nearest to the cut which appear to be affected by the pruning. To avoid starting the basal buds into growth, the pinching should evidently be done late in the season, though the actual time at which it will be most successful must vary very much with the character of the trees, and that of the season in question.

In the experiments which have recently been started at Woburn, the influence of the date of summer pruning is being investigated on a number of different varieties of Apples and Pears, the dates selected ranging from the middle of July to the beginning of September. In the few experiments which have been in progress there since 1894 the summer pruning had been done in August, and the general results obtained are entirely negative in character, neither the size of the trees nor the weight of the crops showing any appreciable difference when compared with similar trees which have been subjected to moderate autumn pruning only (*loc. cit.*). In 1906, however, the crops from the summer-pruned plots were very much below

the average, but only one of the three varieties under investigation (Bramley) fruited that year. Although the present size of the summer-pruned and winter-pruned trees is the same, it is not possible to affirm that the wood formation has been identical, for the prunings have not been weighed. From the results obtained with very severe pruning and cutting back in summer, it would appear that even moderate summer pruning must decrease somewhat the wood formation.

In illustration of the great variation of results produced by differences in soil, I may quote a letter received some time ago from Mr. F. W. Moore, of the Botanic Gardens, Glasnevin. He says: "Within a radius of 15 miles from this, the conditions are quite different. Here if I do not summer prune—or, I should say, summer pinch, for I never remove more than two eyes in summer—I get a number of blind eyes at the base, and if I cut hard enough in spring to make these eyes break, I only get growths, and not spurs. The soil here is a poor light loam, shallow, and resting on limestone gravel. At Straffan, about 15 miles from this, on a cool, stiff clay near the river, Mr. Bedford finds that if he summer prunes he gets too much rank growth, and that the eyes break well even after a light winter pruning. We have often compared results. He suffers from too much moisture as a rule; I suffer from too much drought."

The more serious operation of summer pruning proper, as contrasted with summer pinching, may doubtless have some inhibitory effect on the growth of the tree similar to that which followed from the hard pruning in summer in the case of the Woburn experiments already quoted. It can only be in exceptional cases that such stunting of a tree can ever be desirable, and, whatever the immediate effect on the fruiting may be, it is probable that it will result in a diminution of the total crops borne by the tree in its lifetime. It is clear, too, that with such summer pruning there is always a great risk of getting a thicket of useless growth and a considerable reduction of fruit. It would seem, therefore, that summer pruning proper should only be applied to vigorously growing branches in cases where it is desirable to check their growth for the sake of improving the balance of the tree.

Perhaps it is legitimate to raise the question as to how far summer pruning, even when it accomplishes all that is expected of it, is really desirable. All that it can do is to increase the blossom buds on a tree, but that does not necessarily increase the fruiting, and it may even have the opposite effect. Probably in nine cases out of ten a deficiency of crop, in the case of a tree which has come to maturity, is not due to deficiency of flowering, but to the destruction of the blossoms by frost or living pests, or to the imperfect fertilisation, or setting, of the fruit. Numerous cases may be noticed every year in which trees which seemed rather deficient in flower have yielded as much fruit as they could well carry, and others in which there has been excessive flowering, followed by little or no fruit. Excessive flowering also often leads to reduction in the value of a crop by the strain which it puts on the resources of the tree. This is very noticeable with Lord Grosvenor and some other Apples. A row of 20 large bush trees of this variety, which have been under my immediate observation, have offered a conspicuous example in point this year. About half of them had very little blossom, but yielded eventually a good paying crop of fine fruits, the trees being throughout the season in a good, healthy condition; the other half of the trees flowered so profusely, and the fruit set so well, that the trees have been quite exhausted and almost killed; and, in spite of the most ruthless thinning, the Apples never swelled and the crop was worthless. In fact, with many varieties it is a reduction, and not an increase, of the blossom buds which is required to assure a paying crop, and this is recognised in the case of trained trees, where persistent summer pruning often multiplies the fruit buds to such an extent that disbudding has to be resorted to.

Mr. A. H. Pearson, Lowdham, Notts. (whose paper was kindly read in his absence by his brother, Mr. C. E. Pearson), said: In accepting your invitation to write a short paper upon "Summer Pruning of Fruit Trees," I fear I have done wrong, for science, it would seem, asks

*Lyric and Spottiswood, in the Fifth Report (page 40) deals more fully with the results up to that date from the summer-pruned plots.

for a large number of data which the ordinary practical pruner has not made himself familiar with, and the facts accepted by science have frequently to be demonstrated by a long and wide series of experiments which many of us have not the leisure to undertake. However, if any remarks of mine are likely to be of the least service I shall only be too pleased to give them.

At the onset I would say that summer pruning, as it is often understood, is, I think, perhaps the most mischievous practice which fruit growers undertake, and the cause of more dismal failures than any other operation in the fruit garden. What I advocate is summer pinching, which is done by taking off the points of growing shoots when they have made some five or six leaves, or, say, from 4 to 6 inches of wood, when the shoots break again from the top bud, pinch back to two more leaves, which will be all that is necessary in the ordinary season, but in a wet summer a third pinching may be required.

The shoots treated in this way are of course side shoots; the leading shoots will in many cases need no stopping in the summer. The object of this pinching is to keep the side growths from becoming too strong, and to cause the basal buds to plump up and subsequently develop into fruit buds. The word subsequently applies to such fruits as Pears, Apples, &c., for in the case of small fruits—Gooseberries and Currants—the buds will develop the first season. The winter pruning of these side shoots depends much upon the age and condition of the tree, but on all young and vigorous trees every side shoot should be left from four to five buds in length, according to the habit of the tree and whether the variety has buds placed far apart or more closely together; if pruned in this way the top bud, and probably the second, will make growth, thus providing an outlet for the vigorous sap of the tree, whilst the lower buds will remain almost dormant and will make the little rosette of leaves which plainly foretells a bloom bud next season. When bloom buds are formed, and fully developed at the lower part of the shoot and *not before*, the shoots may be shortened back to such bloom buds in order to keep the spurs close to the leading branches and so to ensure a full supply of sap and also to prevent over crowding.

Summer pruning, as often practised, consists in letting all side shoots grow wild, and then in cutting them back to within two or three buds of the leading branch which carries them; by this method all the side shoots get very strong, and the vast majority of the buds left after pruning make vigorous growth either in the following spring or, as is quite as often the case during a growing season, the growth is made the same autumn. The result is much the same as that obtained by clipping a Hawthorn hedge in July and again at Christmas. I believe there is a Scotch saying, "Saw ye ever haws on a clippit hedge," and most certainly one rarely sees fruit on the thousands of almost solid pyramids which are to be seen in British gardens, almost as handsome as the Continental bay trees and useful to form shelters for blackbirds' nests.

Summer pinching, as described, is proper for all kinds of fruit trees which form fruiting spurs—Apples, Pears, Plums, and Cherries, with exception of the Morello class, and also for cordon and trained Gooseberries and Red and White Currants, whilst Peaches, Nectarines, Apricots, and Morello Cherries fruit on the young wood, and the pinching of these is confined to stopping hard those shoots which will not be required for laying in, or any which threaten to upset the balance of the tree by too vigorous growth. If pinching be practised, the knife will only be required to cut out the wood which has carried a crop of fruit, and gumming will be much less seen than where the knife is used more freely. This is most marked in the case of young trees; it was formerly the custom of nurserymen to grow their one-year trees of these fruits, which are termed maidens, in a natural manner, and they made upright bushes 3 or 4 feet in height, which, when required for training, were cut back the following season to some 12 or 15 inches from the soil in order to make them branch out from the lower buds; this severe pruning often caused gumming, and to avoid this we now pinch out the lead of the trees which are wanted for training, and so cause the buds to break the first season. The resulting shoots are tied out, and the foundation of a trained tree is secured

the first season, which is a gain, but the great point is that gumming is almost unknown upon trees treated in this manner.

Now as to the form of tree which should be summer pinched, one naturally turns first to the single cordon as an example of the tree which must be so treated; then we take all wall and espalier trees of those fruits which bear on spurs, and we say that the side branches of horizontally trained trees are only cordons growing laterally from the main stem; double cordons, palmettes and Verrier's palmettes are, of course, only duplications of the single cordon, and, lastly, true pyramids are only single cordons springing from the central axis of the main stem. Such pyramids one rarely sees in this country, where skilled pruners are scarce, and their labour dear; but in Belgium, where I learned my pruning, every decent fruit garden can show grand specimens of this style of pruning, especially of Pears, trees of many years' standing, and carrying crops of grand fruit to old age. In many gardens in Britain, one finds Apple trees trained in basin shape, and all the branches treated as cordons, which carry fine exhibition fruit; and in Worcestershire there are hundreds of acres so pruned, but as the trees get older and carry heavy crops, they are only pruned once a year.

The great majority of growers for market do very little pruning upon either standard or bush fruit trees, after the first three or four years, beyond cutting out any dead or crossing branches, but allow the trees to follow their own inclination.

With regard to the value of summer pinching, one has only to walk into the young quarters of a fruit tree nursery, and see three-year Apples which have been pinched for cordons carrying full crops of fruit, whilst the bushes amongst which they are standing, and under precisely similar conditions otherwise, may have odd fruits here and there. At the last R.H.S. meeting, Messrs. Veitch & Sons showed two-year cordon Apples with 10 large fruits on each; they could not carry more, because there was no space to stick them on. Again, how frequently one goes into gardens where the wall trees run wild, with summer growths from 1 to 2 feet long smothering the trees, and fruit conspicuous by its absence, or only to be found at the extreme end of the extension shoots. This is often because the head gardener delights more in glass than in hardy fruits, but more often because in these days large gardens are terribly under-handed, and there is no one to do the work at the proper time. In these cases I always say, as soon as the rush of early summer work—bedding and what not—is over, run round the walls and espaliers and break the side shoots back to 6 or 8 inches, leaving the broken portion hanging on. This broken part will absorb a small amount of sap, and so prevent the lower buds from breaking into growth, but at the same time there will be a sufficient check to throw the sap into these lower buds, and plump them up ready for forming fruit buds the following season. If the owners of the trees should object to the untidy appearance of hundreds of broken shoots hanging on the trees, the obvious remedy is to provide labour to do the pinching earlier.

I fear I have failed to answer many of the questions put to me, but it will, I think, be clear that young trees, especially those growing in rich soil and upon free stocks, will need more attention in the way of summer pinching than those which are older and less vigorous, or worked upon dwarfing stocks, or growing in less fertile soil.

In conclusion, I may say that pinching may be too severe as well as pruning. Healthy trees must have some outlet for the sap; the extension shoots will not take all the roots sent up, and if one will pinch or prune too closely, the remaining buds *must* make wood growth instead of bloom. I was once asked to see the trees of an amateur, who said he could obtain no fruit, and after looking round his walls and espaliers, I told him I had never seen trees better pruned. He thought I was joking, and said that was only his first pruning to allow the wood to ripen off, and that he intended to go over them again and shorten every side growth to two buds; under which treatment only complete exhaustion of the trees would produce fruit buds.

Too close pinching or pruning, especially the latter, is the great cause of our gardens being fruitless, and the next great fault is allowing

bunches of spurs to remain on older trees. After fruit spurs are fully developed, they should be pruned closely; two or three bloom buds on a side shoot, each bud capable of producing a bunch of flowers and leaves, should suffice, but many old trees will be found with a dozen or more fruit buds on a side growth, the result being that they smother one another out of existence.

Mr. W. Seabrook, Springfield Nurseries, Chelmsford, said that he had learned to grow good fruit by making mistakes and correcting them. Twenty years ago, when he had first begun to grow fruit, he read all there was to be read in books upon the subject of pruning, and found much diversity of statement, a condition of things that persisted to this day, and he had come to the conclusion that pruning could not be learned from books. As a result of his experience, he had formed the opinion that if first-class fruit was to be grown—and that was the only kind for which there was a continual demand at remunerative prices, and the only kind that was worth growing—severe pruning both in winter and summer must be resorted to. Dwarfing stocks must be used, and then fruit will be formed and grow well early in the life of the tree, and the tree will keep on fruiting. He had at one time tried the method of breaking down the laterals, and had come to the conclusion that it was far better to remove them all together, because if they were left hanging, they shaded the rest of the shoots, and a considerable part of the benefit that was to be derived from summer pruning was lost. He had been told that the trees so treated would not last long, but he thought it better to have 20 years' fruit to start with, even if after that time the trees wanted to be renewed, rather than to wait 15 years while the trees were growing before he had any fruit at all. Many people advocated pruning back to within six buds of the base of the shoot, but he considered that not to be sufficiently far, as the fruit buds that would develop on the short as the result of that treatment would be too far from the branch. He found that the basal buds were quite unaffected if the shoots were left as long as that. They should be pruned back to three buds; then usually the highest of these would develop into a vegetative bud, the middle one would remain dormant, and the basal one would either in the same season or in the succeeding one become a fruit bud. If the tree was in too vigorous a condition, the second bud might develop into a shoot bud; then he thought was the time to root prune the trees. The subsequent development of the shoot left after pruning gave a good indication of the state of the root system, and showed well when root pruning was necessary. He considered that the best form of tree for growing good fruit on this system was the open bush, or the single cordon, when space was a greater consideration. The late Dr. Bartrum had, during the closing years of his life, resorted greatly to severe summer and winter pruning, dealing even with his standard trees in this way, but Mr. Seabrook thought that would be probably carrying the application of the method too far. In the first six or seven years of their life, however, even standard trees would benefit greatly by the treatment.

Mr. F. W. Moore, Glasnevin, followed, and upheld most of what had been said about summer pruning. He thought that this particular subject was one that was particularly fitted to come up for discussion before the Scientific Committee of the society, as it was a subject that was intimately connected with both the practical and scientific aspects of plant physiology, and much good should arise from the wedding of the scientific enquiry with the experiences of the practical man. He thought that a considerable amount of the difference of opinion expressed upon the subject by growers arose from the fact that the expression "summer pruning" was often misconstrued, and many had insisted upon the term "summer pinching" as being the more accurate one. He considered, however, that the process was properly called pruning, and that all such operations as the pinching and thinning of shoots should be included under the same term. He insisted upon the principle that no general rule could be laid down for the treatment of all trees, but that several things should be taken into consideration. The nature of the stock should be considered; the variety of fruit grown should also be considered. For

instance, the varieties Early Victoria, Lord Grosvenor, and Stirling Castle he had found, if severely summer pruned, gave too much fruit, while, on the other hand, such Apples as Bismarck and Blenheim Orange called for much more severe treatment. He spoke in eulogistic terms of the Belgian system of pruning, and advocated the open bush as the best form of tree for giving the greatest amount of first-class fruit from the smallest space. He thought that judicious summer pruning would go a long way to avoid the necessity of heavy winter pruning.

Mr. Smith, of Loddington, was the next speaker. He said he could add very little to the remarks that had been made by the previous speakers, but he would like to emphasise the advice that had been given to thin the trees out well, and to shorten the lateral shoots back to three buds in the summer. He thought, too, that each variety should be considered separately, and each requires different pruning from the others, giving as instances of this the fact that Bismarck should be severely pruned, while Worcester Pearmain should be thinned only. He pointed out the necessity for admitting all the light and air possible into the tree, and said that the pruning should be done from all round the tree, not from one side only.

Mr. F. J. Baker, A.R.C.S., thought that there was need to investigate the conditions under which the bud may be made to form a fruit instead of a shoot, and suggested that the presence of a considerable amount of nitrogenous manure in the soil would tend rather to the formation of shoot buds than to that of fruit buds. He considered that many of the previous speakers had suggested the carrying out of the operation under discussion at a period too late in the year, and thought that twisting the shoot some little distance above its point of origin was a better practice than actually removing the whole of the portion of the shoot that was considered undesirable. He had found that by carrying out this operation in the first week in June that there was an unmistakable development of fruit buds at the base of the shoot operated upon towards the end of July.

Mr. Chas. Foster, of Reading, considered that the balance between the root and branch system could be better kept up by lifting the tree at frequent intervals than by doing so much pruning. Each variety should be treated upon its merits, but he thought that severe summer pruning was not to be advocated.

Mr. W. H. Divers sent a branch of an Apple tree of the variety Bismarck heavily laden with somewhat small fruits, showing the result of omitting both summer and winter pruning in 1906. The tree was bearing a heavy crop on the top, so that it was really breaking down with the weight. Several of the speakers referred to the branch in the course of their remarks, and regarded it as a good illustration of an undesirable state of things, since many small fruits had been secured instead of a few of much better quality, and these in a part of the tree that was not easily dealt with, and where they were greatly exposed to the wind.

THE HORTICULTURAL CLUB.

"A CAMPING TOUR FROM DAMASCUS TO PETRA IN ARABIA."

ON Tuesday, the 15th inst., the Horticultural Club resumed its monthly dinners at the Hotel Windsor, Mr. Harry J. Veitch occupying the chair, and a large number of members and guests attending for the purpose of hearing a lecture on the above subject, delivered by Mr. Arthur W. Sutton, of Reading. Although the lecturer did not touch at all upon the botanical interest of his journey, his hearers were delighted by his graphic comments on no fewer than a hundred beautifully-coloured slides illustrating the journey of himself and his small party from Beyrout via Damascus to the remains of Petra. Petra, for many centuries, was utterly unknown to occidental travellers, and until a few years ago could only be visited at imminent risk of life, owing to predatory Bedouins. Even now, under the immensely improved conditions, this ruined city can only be reached after considerable and costly arrangements with the powers that be, authoritative and romantic, on the line of route. Even the railway, which covers a great part of the distance, is normally traversed by trains which can only be described as mere cattle trucks, and, when

crowded by natives, they become intolerable to visitors. It is only, therefore, by great favour and by the giving of backsheesh in many forms, that Petra can even now be reached, though Messrs. Cook and Son, for the first time, have planned out a tour to Petra which will take place in April next.

Marvellous as are the evidences scattered about the world of vanished communities whose edifices, religious and other, are found in ruins in spots which are now depopulated deserts, those of Petra must undoubtedly rank among the most striking, and are, indeed, in many respects, unique. By the aid of scores of faithfully-coloured photographic slides, mainly taken by himself, the visitors were enabled to mentally follow Mr. Sutton on horseback through the chaos of brilliantly-red sandstone rocks and hills amid which Petra was, we cannot say built, but sculptured. It is approached through a deep, narrow cañon a mile and a half long, and but a few yards wide, with rugged, perpendicular sides hundreds of feet in height, which has been excavated by a small river through the crimson sandstone. After a series of views depicting this cañon in varied aspects, in deep shadow for the main part, but this invariably contrasted with a glimpse of intense blue sky above and a dash of brilliant sunlight, absolutely dazzling to the eye as it strikes on the rich crimson and scarlet of the upper cliffs, visitors saw facing them, and apparently closing the chasm, a totally unexpected glimpse of a magnificent façade of a temple which is hewn wholly out of the solid rock. The next view exhibited the front of this temple, the immense size of which is evidenced by the apparently pigmy nature of the party on horseback and on foot assembled at its entrance. One of the most striking features, amongst many, is the advanced artistic and architectural character of not only this temple, but the scores of others that were shown. One of these, being unfinished, afforded an idea how, the site being chosen, the rock was cut away and excavated bit by bit until eventually the entire edifice was sculptured out in bold relief, precisely as the sculptor evolves the statue from the marble block.

At the ancient Greek city of Jerash or Gerasa, about half-way between Damascus and Petra, an immense amphitheatre was shown, capable of accommodating many thousands of spectators, mile-long lines of magnificent Ionic columns, the remains of former palaces, temples, &c., indicate the site of a great city, now a desert plain. Petra itself has its amphitheatre on similar colossal lines, indicating, as does the infinity of architectural work effected, an immense population, and yet even the few natives which people the vicinity know nothing, even by tradition, of the past splendour, or of the commerce which must have been associated with it. On most of the slides could be seen evidences of a sparse vegetation, which in most cases, and especially about the temples, was composed of Oleander shrubs.

Mr. Sutton concluded his admirable and remarkable exhibition and lecture by quoting some of the references to Petra and other places visited, which are undoubtedly indicated in the Bible, whence it would appear that Petra was inhabited by the descendants of Esau, and suffered innumerable vicissitudes of fortune in the conflicts between the tribe of Edom (Esau) and the rest of the Israelites. The last slide was taken from a beautiful picture of a French artist, depicting the descent of Joseph, Mary, and the infant Christ into Egypt as a fitting accompaniment to some remarks of Mr. Sutton on the salutary influence of a visit to the Holy Land on the wavering mind as regards belief in the Christian religion.

Mr. Harry J. Veitch, in a felicitous speech, proposed a vote of thanks to Mr. Sutton, and this was seconded by Sir Albert Rolitt, LL.D., who said the address had been a spectacular one, illustrated by what he might call, from their subjects, petrified pictures. It had recalled a similar journey of his own, when, leaving Cyprus, he crossed to Beyrout, on the Syrian coast, and rode thence over the Lebanon to Damascus, and through Syria. As Mr. Sutton had so vividly described, everything was of interest in that "Nearer East"—the vast Fir and the Caroub trees of Cyprus—the wonderful florescence of the slopes of the Lebanon and Anti-Lebanon in the early spring, equalled only by those above Smyrna, in Asia Minor. The

Purple Valley; the magnificence of Mount Hermon; the Gardens of Damascus; the ruins of temples and cities, were all sights to see. Mr. Sutton had enabled him to see all this again, which, by-the-bye, he had nearly been prevented doing, for, as he rode over the Lebanon on his return, he was very nearly lost in a storm, and in deep snow, near the summit. Mr. Sutton had made a remark about backsheesh. Well, this was a nuisance; but, after all, in the East it did not amount to much, generally a few words in Arabic sufficed—Bukra fil mish-mish—which meant, "There will be Apricots to-morrow," or, proverbially, "Christmas is coming." Life in the Lebanon was nowadays comparatively safe, and the improvement in the country in recent years immense, while the Order of St. John, through its Ophthalmic Hospital, the colleges of Beyrout, and other temporal, not less than spiritual, missionary work having done much to eradicate the fearful scourge of ophthalmia and other sources of misery and conflict.

Mr. Sutton, in response to a strongly expressed request, promised to exhibit another series of slides from Palestine at a future date.

PROPOSED UNION OF HORTICULTURAL MUTUAL IMPROVEMENT SOCIETIES.

OCTOBER 18.—In response to an invitation issued by the Council of the Royal Horticultural Society, and published in our issue for Oct. 5, p. 249, there was a large gathering of representatives of Mutual Improvement societies in the Vincent Square Lecture Hall on the afternoon of the above date, to discuss the proposals put forward by the Council with respect to the formation of the proposed union and the general rules or principles which would guide its constitution and work. Sir Albert Rolitt, a member of the Council, presided, and was supported by the Rev. W. Wilks, secretary, and Mr. A. J. Gaskell, assistant secretary. The special aims of the Council in relation to the formation of the union—a work the Society had been invited from outside to undertake—were set forth in a paper distributed to the delegates, and included the following suggestions:—That there be kept at Vincent Square a register of the Improvement societies, and also a register of competent lecturers willing to address the members of these societies; that copies of the respective societies' rules and cards of arrangements for each season be deposited at Vincent Square; that the foregoing registers be open to inspection by duly appointed officers of the respective societies; that an annual conference of the societies' delegates be held at Vincent Square; that a series of typewritten lectures, with lantern slides to illustrate them, be prepared and let on loan at very moderate cost to the societies; and that the payment of an annual fee of 5s. by a society, with adherence to the above conditions, should constitute affiliation to the union. It was further shown that the primary objects aimed at were to strengthen existing societies, to increase their numbers, to promote interchange of lecturers, and other purposes already described. These various proposals were warmly discussed, representatives of numerous societies offering suggestions of various descriptions. In relation to the affiliation fee, it was suggested that societies affiliated to the R.H.S. by a payment of one guinea annually should be exempt from paying the 5s. fee. The secretary thought the council would agree to that proposal. Some delegates wished the conference could meet annually on the first day of the October Fruit Show, but that was held to be impossible. After general discussion, the Rev. W. Wilks gave a clear reply all round, and made the relations the union would hold to the Royal Horticultural Society to be readily understood.

SCHEDULES RECEIVED.

BOROUGH OF CROYDON CHRYSANTHEMUM SOCIETY'S twentieth exhibition, to be held on Tuesday and Wednesday October 29, 30, 1907, at the Public Halls, Croydon. Secretary, Mr. W. B. Beckett, "Woodcote," Purley.

DEVIZES BENEVOLENT SOCIETY'S annual Chrysanthemum Show and Bazaar, to be held in the Corn Exchange, Devizes, on Tuesday, November 12, 1907. Hon. secretary, Mr. A. J. Randell, Exchange Place, Devizes.

Obituary.

ALEXANDER AIKMAN. Many of our readers will regret to hear of the death of Mr. Alex. Aikman, business manager of *The Garden* newspaper. Deceased was engaged at his usual duties at the office on the 15th inst., and death took place at his residence, Barnes, on the 19th inst., from heart-failure following upon pneumonia. Mr. Aikman was a son of Mr. R. Aikman, formerly head gardener at Duns Castle, Berwickshire. In 1893 he came south, and served for a period in the Marquis of Bute's gardens at Cardiff Castle, under the late Mr. Andrew Pettigrew. From Cardiff, Mr. Aikman went as a journeyman to the Royal Gardens, Kew, and leaving Kew in December, 1895, he filled a position for a short time in the nurseries of Messrs. J. R. Pearson & Sons, Nottingham. Following this appointment he became correspondence clerk in the offices of Messrs. Jas. Veitch & Sons, Ltd., Chelsea, where he remained until about nine years ago, when he was appointed business manager for the horticultural department of *Country Life*. Subsequently, on

MARKETS.

COVENT GARDEN, October 23.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Ed.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Anemones, dz. bchs.	2 0 3 0	Lilium longiflorum	2 0 2 0		
Asters, p. dz. bchs.	1 0 2 0	— "tigrinum	1 6 2 0		
Boyvatina, dz. bchs.	4 0 6 0	Lily of the Valley,			
Calla aethiopica, p.		p. dz. bunches	4 0 6 0		
dozen	1 6 2 6	— extra quality	8 0 12 0		
Carnations, per doz.		Marguerites, white,			
dozen blooms,		p. dz. bunches	2 0 3 0		
best American		— yellow, per dz.			
various	1 0 2 6	bunches	2 0 3 0		
— smaller, per doz.		Mignonette, per dz.	2 0 3 0		
bunches	9 0 12 0	bunches	2 0 3 0		
Cattleyas, per doz.		Odontoglossum			
blooms	10 0 12 0	cristatum, per			
Chrysanthemums,		dozen blooms	2 0 2 6		
best blooms, p.		Pantratum, per			
dozen	1 0 2 0	dozen fls.	2 0 3 0		
— small, per doz.		Pelargonium,			
bunches	3 0 4 0	show, per doz.			
— maximum	1 0 2 0	bunches	4 0 6 0		
Coreopsis, per doz.		— Zonal, double			
bunches	2 0 3 0	scabket	4 0 6 0		
Cornflower, per dz.		Ranunculus, p. dz.			
bunches	1 0 2 0	bunches	2 0 4 0		
Cyclamen, per doz.		Roses, 12 blooms,			
bunches	6 0 8 0	Niphetos	1 0 3 0		
Cypripedium, per		— Bride'smaid	2 0 3 0		
dozen blooms	2 0 2 6	— C. Test ut	2 0 3 0		
Dahlia, doz. bchs.	1 6 2 6	— General Jacqueminot,			
Eucharis grandiflora,		per doz.			
per doz.		bunches	4 0 6 0		
blooms	2 0 3 0	— Kaiserin A.			
Gaillardias, per dz.		Victoria, dozen			
bunches	1 6 2 0	blooms	1 6 3 0		
Gardens, per doz.		— Mrs. J. Laing	1 0 3 0		
blooms	1 6 2 0	— C. Metuet	1 0 3 0		
Gladiolus, various		— Liberty	1 0 2 6		
hybrids, per dz.		— Mad Chateaux	1 0 3 0		
spikes	1 0 2 0	Scabious, per doz.			
— Brechtienensis	2 0 3 0	bunches	2 0 3 0		
Gypsophila elegans		Statice, per dozen			
p. dz. bunches	2 0 3 0	bunches	2 0 3 0		
Heather, doz. bchs.	2 0 4 0	Stephanotis, per			
Lapageria alba, dz.	1 0 1 6	dozen fls.	3 0 5 0		
Lilac (French), per		Tuberose, per dz.			
bunch	3 0 4 0	blooms	0 4 0 6		
Lilium auratum	2 0 3 0	Violets, per dozen			
— lancifolium,		bunches	1 0 2 0		
rubrum and		— special quality	2 6 3 0		
album	1 6 2 0	— Patmas, p. bch.	2 0 3 0		

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Adiantum cuneatum, per dozen	4 0 6 0	Hardy foliage			
bunches		various, per			
Asparagus plumosus, long		dozen bunches	2 0 6 0		
trials, per doz.	8 0 12 0	Ivy leaves, France	2 0 2 6		
— medium		— long trials, per			
bunch	1 6 2 0	bundle	1 6 3 0		
— Sprenger	0 6 1 0	short green,			
Berberis, per doz.		doz. bunches	2 0 3 0		
bunches	2 0 2 6	Moss, per gross	4 0 5 0		
Croton leaves, per		Myrtle (English),			
bunch	0 9 1 0	small-leaved,			
Cycas leaves, each	1 6 2 0	doz. bunches	4 0 6 0		
Fern, English, per		bunches	1 0 1 6		
dozen bunches	1 0 2 0	Pernettya, p. bunch	0 9 1 0		
— French, dozen		Physalis Franchetii,			
bunches	1 0 3 0	per dz. bunches	4 0 6 0		
		Smilax, p. dz. trails	1 6 2 6		

Plants in Pots, &c. Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Ampelopsis Veitchii, per dozen	6 0 8 0	Euonymus, per dz.	1 0 9 0		
Aralia Sieboldi, per		Ferns, in thumbs,			
dozen	4 0 6 0	per 100	7 0 10 0		
— larger	9 0 12 0	— in small and			
Araucaria excelsa,		large 60's	12 0 20 0		
per dozen	12 0 30 0	— in 48's, per dz.	4 0 10 0		
Aspidistras, green,		— in 32's, per dz.	10 0 15 0		
per dozen	18 0 30 0	Ficus elastica, per			
— variegated, per		dozen	8 0 10 0		
dozen	30 0 42 0	— repens, per dz.	4 0 6 0		
Asparagus plumosus nanus, doz.	9 0 12 0	Fuchsia, per doz.	3 0 5 0		
— Sprenger, dz.	9 0 12 0	Kentia Belmore,			
— ten nissimus		ana, per dozen	18 0 24 0		
per dozen	9 0 12 0	— Fosteriana, per			
Begonia Gloire de		dozen	18 0 24 0		
Lorraine, p. dz.	9 0 15 0	Latania borbonica,			
Bouvardias, per dz.	6 0 8 0	per dozen	12 0 18 0		
Chrysanthemums,		Lilium longi-			
per dozen	5 0 9 0	florum, per dz.	12 0 24 0		
— best disbudbed	12 0 14 0	— lancifolium,			
Clematis, per doz.	8 0 9 0	per dozen	12 0 18 0		
— in flower	12 0 18 0	Lily of the Valley,			
Cocos Weddelliana, per dozen	9 0 18 0	per dozen	18 0 30 0		
Crotons, per dozen	12 0 30 0	Marguerites, white,			
Cyclamen, per doz.	12 0 18 0	per dozen	4 0 6 0		
Cyperus alternifolius, dozen	4 0 5 0	Pelargonium,			
— latus, per doz.	4 0 5 0	Zonalis, per dz.	4 0 6 0		
Dracenas, per doz.	9 0 24 0	Selaginella, per			
Erica gracilis, doz.	10 0 12 0	dozen	4 0 6 0		
— nivalis, per dz.	12 0 15 0	Solanums, per doz.	6 0 9 0		
— hyemalis	10 0 15 0	Spirea japonica,			
		per dozen	6 0 10 0		
		Verbena, Miss Will-			
		mott, per dozen	4 0 6 0		
		Veronicas, per dz.	5 0 8 0		

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples (English),		Melons, Cantal-			
per bushel:		oupes, each	0 4 0 5		
Bramley's Seed-		— Valerian, case	10 0 12 0		
ling		Nuts, Cob, Eng-			
— Lord Derby	4 3 4 9	ish per lb.	0 34 0 4		
— Warner's King	4 0 4 9	— Filberts	0 2 —		
— Lord Suffield	3 6 4 0	— Walnuts (French),			
— Becklinville		dozen lbs.	4 6 —		
Seedling	3 9 4 6	— Grenoble-Wal-			
— Keswick Colibri	2 3 3 0	nuts, per bag	7 6 8 0		
— Peasegood's		— Almonds, bag	35 0 36 0		
Non-such	5 0 7 0	— Blazes, new,			
— King Pippins	1 6 —	per cwt.	65 0 70 0		
— Cox's Pomona	3 6 5 0	— Barcelona, per			
— Lenthem Pippin		bag	32 6		
— Worcester	3 6 5 6	— Cocoon nuts, 100	12 0 17 0		
— Pearmain, pr. ½		Oranges (Australia)			
sieve	2 6 4 0	— half per case	8 0 12 0		
— Beauty of Bath	2 6 2 9	— Nipsos, per case	11 0 17 0		
— Gladstone	2 3 2 6	— Jamaican, per			
— Cox's Orange		case	12 0 14 0		
Pippin	3 6 7 0	Peaches (English),			
— Nova Scotian:		per dozen			
— Gravensteins,		— 1st quality	8 0 12 0		
per barrel	12 0 14 0	— (2nd)	1 0 2 6		
— Ribston	16 0 19 0	Pears (English),			
— Blenheim	18 0 20 0	— 1st quality	1 0 3 0		
— Calmarian:		— per bushel	2 3 5 0		
— Newtown, per		— French, Doy-			
box	13 6 14 6	enne du Comice,			
Bananas, bunch:		per crate	7 6 12 0		
— No 2 Canary	4 6 —	— French, Louise			
— No 1	5 0 6 0	Bonne of Jer-			
— Extra	6 6 7 0	sey, per crate	8 0 10 6		
— Giants	8 0 —	— Duchesse d'An-			
— Jamaica	5 0 5 6	goulême, per			
— Loose, per dz.	0 9 1 3	crate	9 0 11 6		
Cranberries, p. case	10 0 10 6	— Catillac, Dutch,			
Dates (Tunis), doz.		per basket	2 6 —		
boxes	2 6 —	— per barrel	10 0 —		
Figs (Guernsey), p.		— (California),			
dozen	0 9 1 0	Boire Hatuy			
— Italian, box	1 1 1 2	per box	7 0 —		
Grape Fruit, case	14 6 18 6	— American Batt-			
Grapes (English),		let, Peats,			
— Hambro's, p. lb.	0 4 1 0	per box	7 0 7 3		
— Alicante, per lb.	0 6 1 0	— (California),			
— Gros Maroc,		Doyenne du			
per lb.	0 8 1 0	Comice, p. box	20 0 —		
— English Mus-		— Italian, basket	1 6 1 9		
cats, per lb.	1 0 3 0	Damson (English),			
— Canon Hall,		½ sieve	0 9 1 6		
per lb.	2 0 3 6	Plums (English), p.			
— Belgian Ham-		½ sieve:			
bro's, per lb.	0 6 0 9	— Bon's Seedling	3 6 4 3		
— Almeria, per		— Monarchs	3 0 4 0		
barrel	10 0 20 0	— English Prunes	2 0 2 6		
Lemons:		— California per			
— Messina, case	12 0 14 0	box	6 0 6 3		
— Naples, p. case	17 0 30 0	Gages (English),			
— Lyches, per box	1 0 —	½ sieve	1 6 3 0		
Mangoes, per doz.	4 0 8 0	Pomegranates (Lis-			
Melons (Guernsey),		bata, per case	8 0 8 6		
each	0 8 2 0	Pine apples, each	1 6 2 6		
— French, Rock,		Quinces (French),			
each	2 6 3 0	per crate	2 0 —		
		— Lisbon, p. ca	11 0 11 6		

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes (French),		Lettuce (French),			
per dozen	2 0 —	per dozen	0 9 0 10		
Asparagus, Paris		Marrows (English),			
Green, bundle	5 6 6 0	per tally	3 0 —		
— Sprue, bundle	0 6 0 7	Mint, doz. bunches	0 9 1 0		
Aubergines (French),		Mushrooms (house)			
per doz.	2 0 2 6	per lb.	0 6 —		
Beans, home-grown,		— buttons, per lb.	0 6 0 8		
per bushel	2 0 2 6	— "Brussels" all,	0 5 0 6		
Beetroot, bushel	1 3 —	Mustard and Cress,			
Cabbages, per doz.	0 6 0 9	per dozen pun.	1 0 1 6		
— Greens, bag	1 0 —	Onions (Spanish),			
— red, per dozen	2 0 —	per case	5 0 5 6		
Carrots (English),		— Dutch, per bag	4 0 —		
dozen bunches	1 0 2 0	— pickling, per			
— washed, per		bushel	2 0 2 6		
bag	2 6 —	Peas (English), per			
Cauliflowers, per		bushel	2 0 4 6		
dozen	0 9 1 0	— Parley, 12 bunches	1 6 2 0		
— per tally	4 0 —	— ½ bushel	1 0 1 6		
Celeriac (French),		Radishes (Guern-			
per dozen	2 0 2 3	sey), doz. bun.	0 4 0 6		
Celery, washed, per		Salsify, p. dz. bds.	3 6 —		
dozen	0 10 1 0	Spinach, English,			
Chow Chow (Sec-		per bushel	0 9 1 0		
hium edule), p.		Tomatoes:			
dozen	3 0 —	— French, p. crate	2 0 2 3		
Cucumbers, p. dz.	1 6 2 6	— selected, per			
Endive, per dozen	1 6 1 9	dozen lbs.	2 0 3 6		
Horseradish, for-		— small selected,			
eign, per doz.		per dozen lbs.	2 0 2 6		
bundles	12 0 —	Turnips (English),			
Leeks, 12 bundles	1 6 —	doz. bunches	2 0 3 0		
Lettuce (English),		— per bag	2 6 —		
Cos, per score	1 0 1 3	Watercress, per			
		doz. bunches	0 4 0 6		

REMARKS.—Kent Prunes are now arriving in a very unsound condition, but supplies of this fruit are nearly finished. Apples are dearer, especially choice dessert and large culinary varieties. Home-grown Tomatoes are more plentiful; best coloured samples are selling freely at advanced prices. Kentish Cobs, although arriving in moderate quantities only, are much cheaper than they were last year. Blenheim Pippin Apples from Nova Scotia, and Paris Green Asparagus are the latest arrivals in the market. Trade generally is quiet. P. L., Covent Garden, October 23, 1907.

Potatoes.

Kents, 3s. 6d. to 5s. per cwt.; Bedford's, 70s.; 90s.; 100s.; 110s.; 120s.; 130s.; 140s.; 150s.; 160s.; 170s.; 180s.; 190s.; 200s.; 210s.; 220s.; 230s.; 240s.; 250s.; 260s.; 270s.; 280s.; 290s.; 300s.; 310s.; 320s.; 330s.; 340s.; 350s.; 360s.; 370s.; 380s.; 390s.; 400s.; 410s.; 420s.; 430s.; 440s.; 450s.; 460s.; 470s.; 480s.; 490s.; 500s.; 510s.; 520s.; 530s.; 540s.; 550s.; 560s.; 570s.; 580s.; 590s.; 600s.; 610s.; 620s.; 630s.; 640s.; 650s.; 660s.; 670s.; 680s.; 690s.; 700s.; 710s.; 720s.; 730s.; 740s.; 750s.; 760s.; 770s.; 780s.; 790s.; 800s.; 810s.; 820s.; 830s.; 840s.; 850s.; 860s.; 870s.; 880s.; 890s.; 900s.; 910s.; 920s.; 930s.; 940s.; 950s.; 960s.; 970s.; 980s.; 990s.; 1000s.; 1010s.; 1020s.; 1030s.; 1040s.; 1050s.; 1060s.; 1070s.; 1080s.; 1090s.; 1100s.; 1110s.; 1120s.; 1130s.; 1140s.; 1150s.; 1160s.; 1170s.; 1180s.; 1190s.; 1200s.; 1210s.; 1220s.; 1230s.; 1240s.; 1250s.; 1260s.; 1270s.; 12

COVENT GARDEN FLOWER MARKET.

Although it cannot be recorded that trade is very brisk, there is a little improvement. Good Chrysanthemums have been selling freely, the variety Soleil d'Octobre is now at its best, and other prominent kinds are the bronze variety, Ruyter's Glory, La Triumphant, Boule de Neige, and Madame Desgranges. Miss Elliott is one of the best of the orange bronze shades. Erica hyemalis is now seen on several stands, but, though the plants are well flowered, they do not sell readily. E. gracilis is over-abundant, particularly the white and the pink varieties. Bouvardias are plentiful, the plants generally are dwarf and well flowered. Begonia Gloire de Lorraine is now seen, but it is not yet at its best condition. Cyclamen are well flowered and possess good foliage, but, although supplies are limited, many plants were unsold at closing time. Lily of the Valley, in pots, is now of the best quality. Rose Madame Levassieur, though well flowered, does not attract buyers. Marguerites are well supplied, and most of those seen are equal to spring-grown plants. Solanums are over abundant. Perennial Asters (Michaelmas Daisies) of the vimineous, ericoides and cordifolius types are seen in dwarf well-flowered plants, some of these in large 60's pots, and with shoots about 6 to 9 inches high, are very pretty. Ferns have been selling rather more freely, but they are over-abundant in all sizes. Some remarkably fine Asplenium biforme, in 32 pots, are seen. Asplenium nidus is now rather over plentiful, being hawked about the streets, and when this occurs the value of a plant depreciates, especially any which are regarded as "choice." Cactæums (Crotons) in 48's and 32's are highly coloured. Palms are well supplied, but higher prices are now asked for Kentias in 48's and 32's sized pots, although large specimens are offered for little money.

CUT FLOWERS.

Best and medium-sized Chrysanthemums are selling at better prices. Horseshoe is one of the finest of the yellow varieties, La Triumphant is a good "pink." There are several good bronze and crimson varieties. Lizzie Adcock (the yellow sport from Source d'Or) is very bright, but the flowers are rather small. Among the white kinds Mrs. Scott is still good, also Queen of the Earlys. Immense quantities of blooms from the open ground are seen, but the rough weather has somewhat spoiled many of them. The Roses from the open are now nearly finished, but good blooms from under glass are fairly plentiful; prices for Roses have advanced a little. Carnations are well supplied and are no dearer. Lilliums longiflorum and lancifolium are a little more valuable. Callas are now very good, but have not much demand. Chinese Asters are now nearly over for the season, but the Perennial Aster is seen in large heaps, and the rough, wet weather seems to have very little effect on their quality. Lily of the Valley is more abundant again. Eucharis, Tuberoses, Gardenias, and Lapagerias are well supplied. English Violets are of good quality, but large importations of this flower from France, including the Parma Violets, depreciate their value. Autumnal-tinted foliage is now very good. The Scarlet Oak (Quercus coccinea) is particularly bright in appearance. Beech, Berberis, of several sorts, Prunus, Viburnum, &c., are all to be had, and their returns must be more profitable than those from flowers. J. H., Covent Garden, Wednesday, October 23, 1907.

ANSWERS TO CORRESPONDENTS.

ACACIA JULIBRISSIN: *Lexden.* This Acacia is one that is partially deciduous, and often behaves in its early stages in the manner you describe. A position in a cool greenhouse is all that it requires during the winter months. When growth recommences next spring give the plant a good shift into a rich compost, the plant being a gross feeder. As the summer advances, and there is no danger of frosts, plunge the plant in its pot in a bed of ashes in an open position. At the end of the year the plant will probably flower, by which time it should be at least 5 feet high.

BEGONIA LEAVES INJURED: *W. W.* The damage is not caused by a fungus, but has resulted from excessive moisture on the leaves. Afford more ventilation to the house in which the plants are growing, and so prevent a too humid atmosphere, affording artificial heat if necessary.

BEGONIA WITH GREEN PETALS: *D. & Co.* The abnormality is not uncommon, and is occasionally seen in most flowers, of which the green Dahlia is a good example.

BINDWEED AND COLTSFOOT IN A GARDEN: *X.* From your letter it appears that these weeds are prevalent in one corner of the garden only, therefore the best plan is to trench the weedy quarter, and, as the work proceeds, to throw out the stems and roots of the obnoxious plants and to burn them. Your labour in trenching the soil will be repaid in other directions after the weeds are extirpated.

BULBS: *Californicus.* Many good bulbs are undoubtedly disposed of at the sale rooms. It is not part of our business to compare them with those that can be purchased in the ordinary manner from retail firms. As a rule, if goods are obtained at very low prices, it is not to be expected they represent the best selected samples.

CŒLOGNE: *W. B.* The plants must have suffered from some severe check, but whether this was due to cultural treatment or to the presence of disease, we cannot say in the absence of specimens for examination.

GRAPES: *J. B. M.* The shrivelling of the Hamburg Grapes is caused by the lack of moisture at the roots after the fruit had become perfectly black and ripe. Fruit of Black Hamburg that does not become black but remains red will keep much longer without shrivelling than that which has ripened perfectly. The cause of the redness is generally an excess of moisture in the borders, which keep the roots in action. The cause of the unusual thickness of skin is an excess of moisture at the roots; the general unsatisfactory condition of the fruit is partly due to want of bright sunshine. An abundant admission of air to vineries is essential throughout the season when the vines are growing and the Grapes ripening.

GRUBS ATTACKING CYCLAMEN: *J. A. S.* The grubs are those of a weevil. Trap them with pieces of some vegetable, such as Carrot, or hunt them at night as they feed during the darkness.

HIPPEASTRUM VITTATUM: *Californicus.* This species is known to have been in cultivation in England in 1775. It was first crossed with H. Regina by Mr. Johnson, a Lancashire watchmaker, in 1799. H. Johnsonii resulting. Since that time it has been crossed with almost every available species; especially was this done previous to the last 30 or 40 years since when it has been little used as a parent, its funnel-shaped perianth not lending itself to the florist's ideal of openly expanded segments which H. Leopoldii and others of the more recently introduced species afford. Nevertheless, the discontinuance of hybridising H. vittatum, H. marsinatum, and some of the earlier hybrids of H. vittatum, which bore six or eight flowers on a spike, has resulted in the majority of the more recent hybrid Hippeastrums having but two to four flowers open at once. We doubt whether the three to five guineas now paid for a really fine new Hippeastrum has ever been exceeded, although probably the same prices were asked for the earlier crosses of H. vittatum. The size and arrangement of the flowers of H. vittatum crosses can be well seen in H. Johnsonii.

LEUCOIUM: *Californicus.* We are unable to suggest what may be the cause of failure, not knowing the exact conditions under which the purchased bulbs have been cultivated.

NAMES OF FRUITS: *J. H. A.* 1, Emperor Alexander; 2, Old Nonsuch; 3, Prince Albert; 4, Yorkshire Greening; 5, Doyenné du Comice; 6, Fondante de Cuerné.—*R. E. B.* 1, Belle Dubois; 2, Keswick Codlin; 3, Yorkshire Beauty.—*Glasgow.* Peach Dymond; Apple Grenadier.—*T. S.* 1, Red Doyenné; 2, Bergamot d'Espérance; 3, Cheshunt Pippin; 4, Belle Dubois; 5, Broom Park.—*E. G. C.* 1, Bon Chrétien Fondante; 2, Emile d'Heyst; 3, Groom's Princess Royal; 4, Beurré Diel; 5, Marie Guise; 6, Thompson's.—*Barum.* Autumn Colmar.—*W. W.* 1, Court Pendu-Plat; 2, Warner's King; 3, Decayed; 4, White Westling; 5, Old Hawthorden; 6, Castle Major.—*E. J. M.* The Pear was rotten when received. Please send other specimens better packed, and not so ripe.—*G. M.* 1, Cox's Pomona; 2, Warner's King; 3, Castle Major; 4, Dumbleton's Seedling (syn. Wellington); 5, Bramley's Seedling; 6, Pear Gansell's Bergamot.—*C. A. F.* 1, Fondante d'Automne; 2, Beurré Bachelier; 3, Marie Louise d'Uccle; 4, Doyenné du Comice; 5, Seckle; 6, Apple Warner's King.—*J. Child.* 1, Pear Beurré Clairgeau; 2, Apple Sturmer Pippin; 3, not found; 4, Benoni.—*S. W.* 1, Peasgood's Nonsuch; 2, Bismarck; 3, Emperor Alexander; 4, Castle Major; 5, Winter Strawberry.—*Caen.* 1, Léon le Clerc de Laval; 2, Beurré Clairgeau; 3, Marie Louise; 4, Beurré Rance.—*A. G. Nichols.* 1, too small for naming; 2, Manks Codlin; 3, Gosherry Apple; 4, Waltham Abbey Seedling; 5, London Pippin.

NAMES OF PLANTS: *E. H.* 1, Aster Novi Belgii var.; 2, A. N. B. F. W. Burbidge; 3, A. Novæ anglie pulchellus; 4, A. ericoides Clio; 5, A. Amellus major (good variety); 6, Rudbeckia speciosa Newmannii.—*C. E. Housell.* Aster ericoides.—*E. Hall.* 1, Populus deltoidea; 2, Juniperus virginiana; 3 and 4, Forms of Thuja orientalis.—*G. Stentiford.* 1, Aster Novi Belgii var.; 2, A. N. B. Daphne; 3, A. cordifolius major; 4, A. Tradescantii; 5, A. Novi Belgii Top Sawyer; 6, A. N. B. Robert Parker.—*G. Smith.* 1 and 2, Abies nobilis; 3, Tsuga canadensis; 4, Pinus rigida.—*W. G. F.* 1, Chrysanthemum uliginosum;

2, Helenium autumnale var. cupreum; 3, Coronilla varia; 4, Malva moschata; 5, Prunus lusitanica myrtifolia; 6, Cupressus pisifera plumosa; 7, C. Lawsoniana lutea.—*H. G. Ives.* We cannot undertake the naming of Roses.—*S. R. K.* Hamanthus albidus; the plant is not of any special value.—*M. G. W.* 1, Veronica salicifolia; 3, Rudbeckia speciosa; 4, Chrysanthemum; 5, Matricaria inodora; 6, Senecio Jacobæa; 7, Galium verum; 8, Echeveria secunda glauca.—*V. I.* 1, Ionopsis utricularioides; 2, Maxillaria Houtteana; 3, Oncidium pubes; 4, Sarcanthus paniculatus.—*E. R.* Iresine Herbistii.—*Dendrobe.* 1, Dendrobium suavisimum; 2, Dendrobium Farmeri; 3, Dendrobium crystallinum; 4, Epidendrum variegatum.—*C. M. D.* Eupatorium cannabinum (Hemp Agrimony).—*R. S. G.* The almost defoliated shoot you send is insufficient for determination. It is probably a species of Acacia.—*Z. Y. X.* 1, Dracæna Sanderiana; 2, Curculigo plicata; 3, Chrysalidocarpus lutescens (Areca lutescens of gardens); 4, Fittonia (syn. Gymnostachyum) Verschaffeltii.

NEPENTHES LEAF WITH TWO PITCHERS: *E. B.* Your interesting specimen of Nepenthes seems to show clearly that the basal blade like portion of the leaf whilst in the very young state had begun to bifurcate near the apex. The effect of this would naturally be to produce two pitchers in the place of one. The basal foliar part of the leaf is formed before the pitcher and tendril, and therefore any such bifurcation as we have indicated, taking place at a period earlier than that at which the pitchers were first developing, would explain the peculiarity. After seeing the specimen it is clear that it cannot be due to the concrescence of two leaves.

ONIONS: *F. J.* The young bulbs forming round the base of the flower-stem are quite a frequent and natural occurrence. If allowed to remain undisturbed, each would probably produce a flower-stem and bear seed. If you remove them, and place them under glass, they would produce miniature flower-stems out of season, and therefore worthless.

POTATOS DESTROYED BY MILLIPEDES: *Zebra.* The tubers have evidently been injured both by slugs and by a species of millipede, chiefly the latter. Deep trenching of the soil and the use of artificial manure for the first year should materially check the latter pest. Sliced Mangoes, Carrots, or bran form attractive baits for millipedes, and may be used as traps for this insect.

ROSES: *A. S.* Your cuttings show no trace of mildew or any other fungal disease. It is impossible from the material furnished even to guess at the cause of the leaves falling off the plant. There appears to be no need for any preparation containing sulphuric acid.

SALT SPRAY FOR SEA-SIDE PLANTS: *A. G. S.* The strength at which the spray might usefully be applied would differ with the various species of plants. No conclusive experiments have been made on this subject. If you intend to apply such a spray, it will be necessary to commence with an exceedingly weak solution, and gradually increase the strength as long as you find that the results justify this being done. The extra thickness in the leaves of some plants, due to a salt spray as referred to last week, is not always a desirable condition to encourage. All will depend upon what is required in the particular plant. The condition certainly indicates increased development in a particular portion of the plant, but this may not tend to constitutional hardness or to longevity. In the cultivation of Asparagus, common salt is recognised as being of considerable manurial value.

SOIL ANALYSIS: *Earth.* If you are a Fellow of the Royal Horticultural Society, you can send samples of soil to the Society's Chemist, Dr. J. A. Voelcker, 22, Tudor Street, E.C., who will conduct the analysis for a small fee.

COMMUNICATIONS RECEIVED. E. B. (one shilling has been placed in R.G.O.F. box).—E. M.—H. W.—J. H.—W. H.—S. B.—J. J. W.—J. R. J.—Miss W.—G. W.—H. M. V.—A. B. W.—S. C.—H. M.—W. W. P.—R. N.—J. E. T.—C. G.—T. C.—A. M. J. C.—C. N. ch.—N. M. K.—Copenhagen N. D. (next week) R. P. B. Women's Agr. & Hort. Inst. Union.—J. T.—W. E. L.—C. J. M.—H. B.—W. P.—G. H. S.—E. S.—G. B.—Anxious One.—T. F. Miss T.—W. C.—J. W. S.—C. B.—W. P.—E. B.—A. A.—J. B.—J. R.—A. M.—H. J. M.—H. M. B.—Mrs. K.—Fredrick—A. D. W.—J. D. S.—H. M. B.—C. C.—J. T. H.—J. G.—R. C. G.—W. P.—A. D.—T. L., Keir.

Exhibition of British-Grown Fruits.

OCTOBER 17, 18.—The Royal Horticultural Society's autumn fruit show was held on these dates in the Royal Horticultural Hall, Vincent Square, Westminster. The exhibition was again a success, and although a falling-off was noticed in some of the classes for Apples, it was entirely due to scarcity in some districts. The exhibits of Pears and Apples were fewer than last year, and considerably fewer than in 1904, when upper rooms, and even the basement, were utilised for their display. The weather, on the whole, was unfavourable, but this did not deter fruit cultivators from visiting the exhibition on the opening day, when the Hall was well-filled with visitors. On the second day, however, the attendance was sparse. The arrangements were perfect, and the thanks of all interested are due to the secretaries, Mr. S. T. Wright (Superintendent), Mr. Frank Reader, and the other members of the Society's staff.

The FRUIT AND VEGETABLE COMMITTEE sat on the opening day, and an Award of Merit was recommended by this committee for a late-fruited variety of Raspberry, which is referred to below.

DIVISION I.

FRUITS GROWN UNDER GLASS OR OTHERWISE.
(OPEN TO GARDENERS AND AMATEURS ONLY.)

Collection of nine dishes.—This class was arranged for six kinds at least, and each collection might include only one Pine, one Melon, one black and one white variety of Grape. Not more than two varieties of any other kind were allowed, and no two dishes of the same variety. The 1st prize was awarded to the Earl of HARRINGTON, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre), whose Grapes were specially good, particularly the variety Muscat of Alexandria, the bunches of which were very large and of good form, and the berries well developed, although not so perfectly coloured as they might have been. The bunches of Black Alicante were good, being of about average exhibition size, and finely coloured, but they were not such well-cultivated specimens as the Muscats. Ribston Pippin Apple was capital, also Doyenne du Comice Pear, though not perfectly ripe for consumption. The other dishes included Taunton Hero Melon, Princess of Wales Peach, Victoria Nectarine, Transparent Gage Plum, and a rather small Pineapple. The total number of points awarded this exhibit was 51.

The 2nd prize was awarded to the Hon. Mr. Justice SWINFEN-EADY, Oatlands Lodge, Weybridge (gr. Mr. J. Lock). In the centre this exhibitor had a magnificent and weighty Pineapple, such as we have seldom seen. His Grapes included Black Alicante, and a white Grape, which was labelled Muscat of Alexandria, but the judges expressed the opinion that it was not a Muscat. The on-looker had grounds for suspecting that if the judges had considered the Grape correctly named, this exhibit would have deserved the 1st prize. It is only fair to add that, in the opinion of many Grape growers, the variety was really a Muscat. In the circumstances, the number of points awarded for this exhibit was 49.

On the second day of the show the Grape was definitely labelled by some critic Charlesworth Tokay, but the question can hardly be thus settled, for Hogg, in the *Fruit Manual*, has stated that Charlesworth Tokay is synonymous with Muscat of Alexandria. The other dishes included Pitmaston Duchess and Marguerite Marillat Pears, Cox's Orange Pippin Apple, Princess of Wales Peach, Victoria Nectarine, and Hero of Lockinge Melon. 3rd, C. R. ADEANE, Esq., Babraham, Cambridge (gr. Mr. R. Alderman), who gained 49 points.

Collection of six dishes.—There were seven exhibits in this class, which required that at least four kinds of fruit should be included in each collection of six dishes. Exhibitors might only include one Melon, one black and one white variety of Grape, and not more than two varieties of any other kind, nor two dishes of the

same variety. Pines were excluded. The 1st prize was awarded to a very fine collection from the Earl of LONDESBOROUGH, Market Weighton, Yorkshire (gr. Mr. J. C. McPherson). His Grapes consisted of the varieties Gros Colmar and Muscat of Alexandria, either of which was of exhibition quality, but beyond that not specially remarkable. Apples Washington and Cox's Orange Pippin were very good, being of large size, and exhibiting perfect condition for consumption. Very large fruits of Pitmaston Duchess Pears were shown, and a fruit of "Ringleader" Melon. The 2nd prize was awarded to M. W. PRICE, Esq., Codicote, Welwyn (gr. Mr. T. Patman). This exhibitor had Black Alicante and Muscat of Alexandria Grapes, Marguerite Marillat Pears, Lady Palmerston Peaches, Duchess's Favourite Apples, and Royalty Melon. 3rd, Sir CHAS. HAMILTON, Bart., Hatley Park, Sandy (gr. Mr. T. W. Birkinshaw).

GRAPES.

Collection of six varieties. The 1st prize exhibit was displayed by J. W. FLEMING, Esq., Chilworth Manor, Romsey (gr. Mr. W. Mitchell), who staged beautifully-coloured examples of Lady Downe's Seedling, one bunch being ill-shaped; Madresfield Court, in medium-sized bunches, although the individual berries were of grand size and were perfect in bloom; Muscat of Alexandria, excellent in every respect, the colour being of that tender yellow tint that indicates perfect ripening; Gros Maroc, massive bunches of very large berries that were almost perfect in colour; Mrs. Pince Muscat, the largest bunches in the set, the berries were above a normal size, with perfect colour and bloom; and good bunches of Black Hamburgh, one being rather over the average in size, and both with faultless bloom. 2nd, H. J. KING, Esq., Eastwell Park, Ashford, Kent (gr. Mr. J. G. Weston). The varieties consisted of Lady Downe's Seedling, the bunches of which were very good in form and showed a considerable amount of bloom on the fruits, but the colour was somewhat lacking, as was the case in Mrs. Pince. Of this last-named variety large bunches were shown; Chasselas Napoleon and Muscat of Alexandria were above the average in colour and size of berry and bunch. Mrs. TATE, Park Hill, Streatham Common (gr. Mr. W. Howe), was the only other exhibitor in this class.

Black Hamburgh. The 1st prize was awarded to J. W. FLEMING, Esq., for compact, heavy bunches, perfect in colour, bloom, and all other essentials, well shouldered and having the best shape. 2nd, the Earl of HARRINGTON, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre), with good bunches but inferior in size to those shown by Mr. FLEMING.

Mrs. Pince. The 1st prize in this case did not fall to the largest bunches, but to small, compact, not over-thinned bunches shown by Mr. J. EDMONDS, Bestwood Park Gardens, Arnold, Notts. 2nd, O. E. D'AVIGDOR-GOLDSMID, Esq., Somerhill, Tonbridge (gr. Mr. C. Earl).

Mr. G. RICHARDSON, gardener, Stover Park, Newton Abbot, showed excellent bunches in this class, but unfortunately the berries of one bunch were badly rubbed.

Black Alicante. In this class there was greater competition than in any other, and some uncommonly fine bunches were shown, the fruit in most cases being good in colour and finish. The 1st prize was awarded to W. C. RAPHAEL, Esq., Castle Hill, Englefield Green (gr. Mr. H. H. Brown), for close, compact bunches that were good in shape. 2nd, Sir WALFOLE GREENWELL, Bart., Marden Park, Surrey (gr. Mr. W. Lintott), with bunches but little inferior to those which gained the 1st prize. Colonel Hon. C. HARBORD, Gunton Park, Norwich (gr. Mr. W. Allan), was placed 3rd; one of this exhibitor's bunches lacked a "shoulder," otherwise the exhibit had excellent points. The other exhibits in this class included some bunches of enormous dimensions, and others that would have disgraced a cottagers' show.

Madresfield Court.—1st, J. W. FLEMING, Esq., Chilworth Manor, with neat, fairly compact

bunches, having capital colour and bloom. 2nd, Mr. JOHN DOE, Rufford Abbey, Ollerton, with bigger and finer bunches, lacking in evenness of size and colour. 3rd, F. R. RODD, Esq., Trebartha Hall, Launceston (gr. Mr. F. A. Billings), with small bunches that had suffered from rubbing on the long journey from Cornwall.

Any other Black Grape.—In a good competition the Earl of LONDESBOROUGH, Market Weighton, York (gr. Mr. J. C. McPherson), was placed 1st with very fine bunches, having large berries of Gros Colmar; the bloom on the fruit was perfect. 2nd, Colonel the Hon. C. HARBORD, Gunton Park, with Gros Maroc in massive bunches, having enormous berries and perfect bloom. 3rd, Right Hon. Earl STANHOPE, Chevening Park, Sevenoaks (gr. Mr. J. C. Sutton), with compact bunches of Gros Maroc possessing enormous berries and faultless bloom. Muscat Hamburgh, Lady Downe, and Appley Towers are other varieties that were shown in this class. Some enormous bunches of Gros Colmar came from the HORTICULTURAL COLLEGE, Studley, Warwickshire, but the bunches could scarcely be called handsome and they lacked colour.

Muscat of Alexandria.—1st, J. W. FLEMING, Esq., Chilworth Manor, with large bunches of good form and best colour throughout, indicative of perfect ripeness and fine flavour. 2nd, W. C. RAPHAEL, Esq., Englefield Green, with smaller bunches, having less of the desirable golden tint. 3rd, Colonel the Hon. C. HARBORD, Gunton Park, with small bunches of perfect finish. This class was abundantly filled, and the exhibits were generally of a high order of merit.

Any other White Grape.—1st, ALFRED BENSON, Esq., Upper Garton Park, Merstham (gr. Mr. W. Mancey), with Mrs. Pearson, the bunches being symmetrical and quite ripe. 2nd, Lady TATE, Park Hill, Streatham Common, with the pale-coloured variety Chasselas Napoleon.

COLLECTION OF HARDY FRUITS.

The schedule required a collection of 30 dishes of distinct varieties, grown entirely in the open, not more than 12 varieties of Apples or eight of Pears being allowed. There were six displays, and these occupied much table space, for each exhibit covered an area measuring 12 feet by 3 feet. The 1st prize fell to Colonel BORTON, Cheveney, Hunton, Maidstone (gr. Mr. J. Whittle). He displayed choice samples of Lord Derby, Lane's Prince Albert, Bramley's Seedling, Emperor Alexander, Wealthy, American Mother, and other Apples; of Pears there were noted Beurré Diel, Le Lectier, Doyenné du Comice, Beurré Hardy, Beurré Baltet Père, and Durendeu; of Plums were Belle de Septembre and Coe's Golden Drop; of Peaches, Lady Palmerston, Princess of Wales, Gladstone, and Nectarine; and Morello Cherries. The 2nd prize was awarded to G. T. BATES, Esq., Whitfield, Hereford (gr. Mr. R. Grindrod), for a more varied collection. The finest Apples in this exhibit were Worcester Pearmain, Emperor Alexander, Peasgood's Nonsuch, Royal Jubilee, Mère de Ménage, and Lane's Prince Albert; and of Pears, Beurré Bachelier, Beurré Diel, Duchess d'Angoulême, Beurré Superfin, Gros Calebasse, and Louise Bonne of Jersey; Peaches included Malster, Lord Palmerston, and Late Admirable; Plums, Monarch, Pond's Seedling, Coe's Golden Drop, and Grand Duke. 3rd, Major POWELL-COTTON, Quex Park, Thanet (gr. Mr. J. Cornford), whose exhibit was strong in culinary Apples, such as Chas. Ross, Lord Derby, Warner's King, Peasgood's Nonsuch, and Withington Filbillet.

DIVISION II.

FRUIT GROWN ENTIRELY OUT OF DOORS.
(OPEN TO NURSERYMEN ONLY.)

Twenty-four feet run of six feet tabling. The 1st prize in this important class was awarded to Messrs. G. BUNYARD & CO., Ltd., Royal Nurseries, Maidstone. The fruit had high colouring mostly and was of a high degree of merit. Of Apples some of the new samples

were Cornish Giant, Jas. Grieve, Blenheim Pippin, Woodstock Pippin, Rambour Franc, Crimson Quoining, Lane's Prince Albert, Grenadier, Pott's Seedling, Worcester Pearmain, Stirling Castle, Golden Noble, Bramley's Seedling, New Winter Hawthornden, Gascoyne's Scarlet Seedling, Roundway Magnum Bonum, Duchess of Oldenburg, Emperor Alexander, King of the Pippins, Rival, Norfolk Beauty, The Queen, Bismarck, Warner's King, Northern Dumpling, Charles Ross, Royal Jubilee, Allington Pippin, Tyler's Kernel, Lady Henniker, and Mabbott's Pearmain. The finer Pears were large, but not being ripe they did not exhibit their true colour. There were remarked Gilgil, Conference (very large), Princess, Pitmaston Duchess, Durondeau, Duchess d'Angoulême, Beurré Superfin, Marguerite Marillat, Parrot, Alexander Lucas, St. Luke, Beurré Clairgeau, Fondante d'Automne, and Fondante de Thiriot. 2nd, Messrs. H. CANNELL & SONS, Eynsford, with a very superior exhibit, between which and the 1st prize display there was little to choose. Much of the fruit was finely coloured and well developed, and free from blemishes, either of fungoid or insect agency. There were in this display 45 bushels of Apples in 165 varieties. Gascoyne's Scarlet Seedling, Blue Pearmain, Gravenstein, Pott's Seedling, The Queen, Peasgood's Nonsuch, Lady Henniker, Schoolmaster, Cox's Pomona, Golden Spire, Bietigheimer, and Emperor Alexander were remarkable for either large size or for colour. Some excellent Pears were also shown by Messrs. CANNELL.

Fruit arranged on tables sixteen feet by six feet.—Messrs. LAXTON BROTHERS, Goldington Nurseries, Bedford, made a good display of fruits, which, although excellent, was not fully up to the usual Kentish development or colour. Most of the favourite varieties of Apples were shown, both cooking and dessert, including Charles Ross, The Queen, Ribston Pippin, and Newton Wonder. The new Strawberry Laxton's Perpetual was shown in well-coloured, large and small examples. It is a crimson-coloured fruit, with the achenes slightly embedded. Strawberry St. Antoine de Padoue was likewise well shown, and fruits of the Fern-leaved Blackberry, which are jet black and of large size. The 2nd prize was taken by Messrs. JOHN PEED & SON, West Norwood, Surrey, with a really fine display of fruits, large, clear in the skin, high in colour, and very varied as regarded varieties. Of modern varieties of Apples that were shown were Newton Wonder, Wadhurst Pippin, Allington Pippin, Sandringham, New Hawthornden, Wealthy, Mrs. Barron, Nonsuch, Lord Derby, Charles Ross, Lady Henniker, Bismarck, The Queen, King of Tompkin's County, Lane's Prince Albert, Betty Geeson, Schoolmaster, and Lord Lennox. Of Pears we noted a nice dish of Directeur Hardy, Duchess de Nemours, Beurré Clairgeau, Abbe Fettel, Beurré Alexandre Lucas, Conference, Emile d'Heyst, Princess, and Louise Bonne of Jersey. 3rd, Messrs. PAUL & SON, The Old Nurseries, Cheshunt. This exhibit consisted of Apples and Pears set up as pyramids in shallow baskets. Most of the Apples and Pears were of large size, free from blemish, but lacking in the bright tints of the Kentish and West of England fruits. Pears Beurré Baltet Père, Durondeau, Dr. Piganeau, Beurré Diel, Triomphe de Vienne, Beurré Superfin, Gansel's Bergamotte, Doyenné Boussoch, Louise Bonne of Jersey, Catillac, and Pitmaston Duchess were good examples. Apples Allington Pippin, Emperor Alexander, Gascoyne's Seedling, Lord Derby, Blenheim Pippin, Nonsuch, and Bismarck were all praiseworthy. This part of the table was decorated with arches of white fruited Raspberry canes, red Raspberries, and other members of the genus Rubus.

Messrs. SPOONER & SONS, Hounslow, and Mr. WILL TAYLER, Osborn Nursery, Hampton, Middlesex, made exhibits in this class.

ORCHARD HOUSE FRUIT AND TREES.

Twenty-four feet run of six feet tabling.—As in former years this important class was contested by two exhibitors only, viz., Messrs. GEO. BUNYARD & CO., LTD., Maidstone, and Messrs. T. RIVERS & SON, Sawbridgeworth, Herts., and these were placed by the judges in the order named, Messrs. BUNYARD being awarded a Gold Medal for their exhibit in conjunction with their display in class 14. There were remarked in the premier exhibit trees of the Chiojuro

Pear, a bright brown-russety fruit of globular shape; Marie Louise, of large size; Alexandre Lucas, Doyenné du Comice, Emile d'Heyst, Charles Ernest, Bellissime d'Hiver, and Fondante de Thiriot. The Apples consisted chiefly of brightly-coloured varieties of large size, and very highly indeed was the colouring developed. The trees ranged in height from 6 to 10 feet, growing in pots of from 10 to 14 inches in diameter. Gathered fruits were shown in trays and flat baskets with from six to 12 fruits in each. Very large and fine were Apples The Queen, Loddington Pearmain, Charles Ross, Gascoyne's Scarlet Seedling, Ribston Pippin, Twenty Ounce, Washington, Golden Noble, Lord Hindlip, Allington Pippin, Cox's Orange Pippin, Emperor Alexander, James Grieve, and Peasgood's Nonsuch. The finer Pears were Beurré Diel, Emile d'Heyst, Marie Benoist, Durondeau, President Osmanville, Uvedale's St. Germain, Duchess d'Angoulême, Doyenné du Comice, Beurré Alexandre Lucas, Conference, Pitmaston Duchess, and Conseiller de la Cour. Two dishes of Peaches were shown, viz., Lady Palmerston and Golden Eagle, both of high colour.

Messrs. RIVERS & SON, Sawbridgeworth, Herts., had greater variety in their exhibit, the trees including Oranges, Figs, and Cherries. In addition to the 1st prize, a Silver-Gilt Knightian Medal was awarded. The gathered fruits consisted of the following, viz., the Parrot Pear, of reddish-orange colour, Doyenné du Comice, St. Luke, a variety of their introduction; Beurré d'Amanlis, Magnate, Marie Louise, Pitmaston Duchess, Conference, Beurré Fouquieray, Marie Louise d'Uccle, Glou Morceau, and Princess. The finer Apples were Ribston Pippin, The Queen, Allington Pippin, King of Tompkin's County, Peasgood's Nonsuch, Belle Dubois, Cox's Orange Pippin, &c. Plums, of which there were many in fine condition, included Monarch (with which Messrs. RIVERS have lengthened the season of Plums by a month), and other varieties.

DIVISION III.

(OPEN TO MARKET GROWERS ONLY.)

Two classes were provided for exhibits of hardy fruits, the one for a collection occupying an area of 18 feet by 6 feet, and the other for one measuring 12 feet by 6 feet. The use of berries and ornamental foliage plants were allowed, but not flowers. In the larger class there were two contestants, Mr. W. POUPART, Marsh Farm, Twickenham, and the HEREFORD CO-OPERATIVE FRUIT COMPANY, Hereford (manager, Mr. W. H. Press). The first-named exhibitor was an easy 1st prize winner, his display being composed of best sorts of market varieties of Apples, Pears, and Plums, staged in round and square "baby" baskets, on a padding of wood wool covered with blue paper. He had well-graded samples, nicely coloured, of Apples Alexander, Mabbott's Pearmain, Blenheim Pippin, Cox's Orange Pippin, Coronation (a variety of fine appearance), Wealthy, Norfolk Beauty, Sandringham, Waltham Abbey Seedling, Peasgood's Nonsuch, &c.; Pears Durondeau, Beurré Bachelier, Beurré Fouquieray, Emile d'Heyst, with Plums, Damsons, &c. The 2nd prize fruits were shown in boxes as packed for transit, with a few single dishes and sprays of Smilax for relief. The varieties were of the commoner market Apples.

In the smaller class the only exhibit staged was from the HORTICULTURAL COLLEGE, Swanley, Kent (gr. Mr. Lawson). The fruits were very finely coloured, and were set off by sprays of Cotoneaster, vine leaves, and other foliage with autumnal tints, a row of Acalypha Macfeana being arranged down the centre of the display. The varieties included Peasgood's Nonsuch, Lane's Prince Albert, Newton Wonder, Alfriston, Queen Caroline, and other Apples; Doyenné du Comice, Duchess d'Angoulême Pears, &c.

Twelve dishes of Apples, distinct varieties, six culinary and six dessert.—Only one exhibitor, Mr. H. T. MASON, Hampton Hill, Middlesex, staged in this class, and instead of utilising dishes, he showed his fruits in square, shallow baskets. This notwithstanding, the exhibit merited the highest praise, for the quality of the fruits was of the best, and the grading and packing (in wood-wool) excellent. The varieties were all choice market varieties, and included Ribston

Pippin, Lady Sudeley, Pott's Seedling, Newton Wonder, King of the Pippins, Cox's Orange Pippin (a fine sample), Warner's King, The Queen (excellent), Allington Pippin, Claygate Pearmain, Bismarck, Ecklinville Seedling, and others. Autumn-tinted vine leaves, with Dracaenas and other ornamental plants, were interspersed in the group.

DIVISION IV.

FRUITS GROWN ENTIRELY IN THE OPEN AIR
(EXCEPTING CLASS 32).

(OPEN TO GARDENERS AND AMATEURS ONLY.)

APPLES.

Twenty-four dishes, distinct.—The conditions in this class were that sixteen culinary and eight dessert varieties should be included in each exhibit. There were three collections, and Col. BORTON, Cheveney, Hunton, Maidstone (gr. Mr. J. Whittle) was awarded the 1st prize. Particularly noticeable among the culinary sorts were Peasgood's Nonsuch, Gascoyne's Scarlet Seedling, Emperor Alexander, and Newton Wonder, all more or less coloured with red, and among the perfectly green fruits were Alfriston, Lord Derby, Warner's King, and Belle Dubois. Of dessert varieties those which attracted most notice were Christmas Pearmain, American Mother (one of the best of Apples), Wealthy, James Grieve, and Allington Pippin. The 2nd prize was won by Sir MARCUS SAMUEL, Bart., Mote Park, Maidstone (gr. Mr. W. H. Bacon). A dish of Worcester Pearmain in this exhibit was so intensely coloured with red as to be the most noticeable variety in the exhibit. The culinary varieties—Lane's Prince Albert and Mère de Ménage—were both shown as very fine specimens. 3rd, J. G. WILLIAMS, Esq., Pendley Manor, Tring (gr. Mr. F. G. Gerrish).

Eighteen dishes of Apples, distinct, twelve culinary and six dessert.—Three good displays were seen in this class, the premier prize being taken by a magnificent collection from the gardens of Major POWELL-COTTON, Quex Park, Thanet (gr. Mr. J. Cornford). The front row was comprised of dessert varieties, and here was seen Chas. Ross (size and colour were remarkable in these fruits), Cox's Orange Pippin, Rival, Ribston Pippin, and Wealthy (a beautifully finished sample). At the back were excellent fruits of Emperor Alexander, Lord Suffield, Bismarck, Washington, Fillbasket, Mère de Ménage, Belle Dubois, Peasgood's Nonsuch, Lord Derby, The Queen, and other notable varieties. The 2nd prize was awarded to E. ASCHERSON, Esq., Charing, Kent (gr. Mr. J. Pitts). Amongst the dessert varieties was seen a grand sample of Worcester Pearmain. Ribston Pippin, Ben's Red, Court of Wick, Winter Quarrenden, and James Grieve were other prominent varieties in the front row, and among the culinary kinds such varieties as Lane's Prince Albert, Sandringham, Lord Derby, Lord Suffield, Gloria Mundi, Alexander, Warner's King, and Ecklinville Seedling, were displayed in the best exhibition style. 3rd, Earl DE GREY, Coombe Court, Kingston-on-Thames (gr. Mr. J. Smith).

Twelve dishes, distinct, to include eight cooking and four dessert varieties.—The 1st prize was gained by F. A. BEVAN, Esq., Trent Park, Barnet (gr. Mr. H. Parr), and his specimens were certainly of much merit. The culinary varieties were immense specimens of the following varieties: Mère de Ménage, Peasgood's Nonsuch, Warner's King, Lord Derby, Emperor Alexander, Laing's Cornish Giant, Lane's Prince Albert and Gascoyne's Scarlet Seedling. Mère de Ménage and Peasgood's Nonsuch were well coloured also, but Gascoyne's Scarlet Seedling was duller than it is sometimes seen. The dessert varieties selected for this exhibit were Cox's Orange Pippin, King of the Pippins, Allington Pippin, and another. An extra 1st prize was awarded to C. R. ADEANE, Esq., Babraham, Cambridge (gr. Mr. R. Alderman), for an exhibit that would have been placed in the 1st position, but for a mistake having been made in showing Cox's Pomona as a dessert variety. But for this oversight, the collection was of the greatest merit; all the specimens were of large size, and the skins clear, and well coloured in the specimens that should show other than green colour. The selection of varieties suffered, in our opinion, through the omission of every first-class dessert variety. Omitting



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Cox's Pomona, the three dessert varieties shown were Wealthy, King of the Pippins, and Washington, not at all a good selection when four only have to be chosen. The 2nd prize was awarded to the Right Hon. W. H. LONG, M.P., Rood Ashton, Trowbridge (gr. Mr. W. Struggnell), and the 3rd prize to O. E. D'AVIGDOR-GOLDSMID, Esq., Somerhill, Tonbridge (gr. Mr. Chas. Earl). There were five exhibits.

Six dishes of culinary varieties, distinct.—Colonel BORTON was awarded the 1st prize for a collection consisting of Lane's Prince Albert, Belle Dubois, Lord Derby, Warner's King, Bismarck, and Peasgood's Nonsuch. 2nd, Sir MARCUS SAMUEL.

Six dishes of dessert Apples, distinct.—Colonel BORTON was also awarded the 1st prize in this class, showing the varieties Christmas Pearmain, Ribston Pippin, Wealthy, Cox's Orange Pippin, King of the Pippins, and American Mother. The last-mentioned variety was shown splendidly in this collection, the fruits being of large size and having the rich colour characteristic of the variety, finely developed. The 2nd prize was awarded to Sir MARCUS SAMUEL, Bart.

PEARS.

Eighteen dishes of dessert Pears, distinct.—In this, the largest class for Pears, Sir MARCUS SAMUEL, Bart., gained the 1st prize with a grand collection. The ripest fruits were Louise Bonne of Jersey (excellent fruits), Souvenir du Congrès, Marguerite Marillat, and Beurré Superfin. Beurré Hardy was almost as ripe, and the specimens were very characteristic. Beurré Baltet Père, Pitmaston Duchess, St. Luke, and Marie Benoist were extremely large, and moderate to large size ruled throughout the exhibit. A very pretty collection from Col. BORTON was placed 2nd, and Major POWELL-COTTON, Quex Park, Thanet (gr. Mr. J. Cornford), was awarded the 3rd prize.

Twelve dishes, dessert Pears, distinct. Mr. A. BASILE, Woburn Park Gardens, Weybridge, won the 1st position in this class, showing good specimens of Beurré Superfin, Triomphe de Vienne, Souvenir du Congrès, Charles Ernest, Durondeau, and Conseiller de la Cour, Doyenné du Comice, Beurré Bachelier, Pitmaston Duchess, Duchesse d'Angoulême, Nouveau Potteau, and another. 2nd, F. A. BEVAN, Esq., and 3rd, the Right Hon. W. H. LONG, M.P.

Six dishes, distinct.—The best collection of dessert Pears in this class was from C. A. MORRIS FIELD, Esq., Ashurst Park, Tunbridge Wells (gr. Mr. J. R. Allan), who showed the varieties Triomphe de Vienne, Pitmaston Duchess, Doyenné du Comice, Marguerite Marillat, Beurré Baltet Père, and Doyenné Boussoch. It was found impossible to separate the 2nd prize exhibit, therefore equal 2nd prizes were awarded to Mr. RICHARD E. PHILLIPS, East Street, Sittingbourne, and C. A. MORRIS FIELD, Esq., Sevenoaks (gr. Mr. R. Edwards). There were five exhibits in this class.

PEACHES, PLUMS, CHERRIES, &c.

One dish of Peaches, one variety.—Out of twenty-one exhibits in this class, generally of high merit for the advanced season, the variety Sea Eagle, as shown by the Marquis of NORTHAMPTON, Castle Ashby, Northampton (gr. Mr. R. Searle), gained the 1st prize. The same variety in smaller and less perfectly developed fruits from C. R. ADEANE, Esq., obtained the 2nd prize.

One dish of Nectarines, one variety.—There were five exhibits of Nectarines, and generally they were less good in quality than the Peaches. The fruits selected to receive the 1st prize were very small specimens of the variety Pineapple, but for this late season they were extremely well coloured. They were exhibited by C. R. ADEANE, Esq.

Three dishes of Plums, distinct, grown under glass.—Excellent fruits of moderate size were shown by Mr. JAS. VERT, Audley End Gardens, Saffron Walden, who gained the 1st prize. The varieties were Golden Transparent Gage, Coe's Violet, and Coe's Golden Drop. The Marquis of NORTHAMPTON was awarded the 2nd prize, and he had the varieties Grand Duke, Coe's Golden Drop, and Reine Claude de Bayay. 3rd, Mr. J. H. GOODACRE.

Three dishes of Plums grown out-of-doors.—Remembering the abundant Plum season, it appeared appropriate that there were as many as thirteen exhibits of three dishes in three varieties. The Earl of ASHBURNHAM, Battle (gr. Mr. G. Grigg), won the 1st prize with Grand Duke, Coe's Golden Drop, and Monarch. Mr. JAMES VERT was awarded the 2nd prize for the varieties Pond's Seedling, Monarch, and President.

One dish of any other dessert Plum.—The variety which gained the 1st prize was Reine Claude de Bayay, as shown by E. S. HANBURY, Esq., Poles Park, Ware (gr. Mr. Church). The variety Rivers' Late Orange, though gaining no award, was particularly noticeable in this class by reason of the large size and rich colour of the fruits.

One dish of culinary Plums.—Out of seventeen exhibits, a dish of Pond's Seedling, shown by the Marquis of NORTHAMPTON, was awarded the 1st prize.

DIVISION V.

SPECIAL COUNTY CLASSES.

These classes were provided for counties having approximately the same meteorological conditions to compete against each other. In the case of Apples, the schedule required six dishes, four of culinary and two of dessert varieties: and of Pears, six dessert varieties.

KENT.—*Apples:* Seven exhibits of Apples were seen from this county, all of excellent quality and remarkable for the high colour and finish seen in the fruits. The premier position was taken by W. E. S. C. DRAX, Esq., Olantigh Towers, Wye (gr. Mr. J. Bond). Of dessert varieties were Worcester Pearmain and Lady Sudeley, and of culinary sorts Bramley's Seedling, The Queen, Hambling's Seedling, and Peasgood's Nonsuch. The 2nd prize was awarded to H. G. KLEINWORT, Esq., Wierton Place, Maidstone (gr. Mr. B. J. Mercer).

Pears.—The same number of entries was staged by Kentish growers in the class for Pears. The winning fruits of both the 1st and 2nd prizes were next each other, and not much difference was seen in their quality, but The Dowager Lady HILLINGDON, Wilderness Park, Sevenoaks (gr. Mr. J. Shelton), had slightly the better examples and was awarded the premier place. Doyenné du Comice, Beurré Bosc, Beurré Superfin (exceptionally good), Durondeau, Pitmaston Duchess, and Marie Louise d'Uccle constituted the varieties in the 1st-prize exhibit; those in the 2nd, shown by Mr. RICHARD E. PHILLIPS, East Street, Sittingbourne, being Doyenné du Comice, Beurré Hardy, Beurré Bachelier, Princess, Conseiller de la Cour, and Pitmaston Duchess.

SURREY, SUSSEX, HANTS, DORSET, SOMERSET, DEVON, AND CORNWALL.—*Apples:* Much the best collection of the three staged from these counties was shown by B. H. HILL, Esq., Newcombes, Crediton (gr. Mr. G. Lock). All the fruits shown by Mr. Hill were of remarkably fine colour, and very large. Emperor Alexander and Gascoyne's Scarlet were the pick, but Saltmarsh Queen, Peasgood's Nonsuch, Cox's Orange Pippin, and Coronation were also of high quality. 2nd, J. B. WINGFIELD-DIGBY Esq., Sherborne Castle, Dorset (gr. Mr. T. Turton), whose best dishes were those of Pott's Seedling, Wealthy, and Peasgood's Nonsuch.

Pears.—The best Pears in this section were shown by Sir EDMUND LODER, Bart., Leonardslee, Horsham, Sussex (gr. Mr. W. A. Cook). All the fruits were of very large size, especially those of Beurré Baltet Père, Souvenir du Congrès, and Marguerite Marillat. The other dishes were Doyenné du Comice, Pitmaston Duchess, and Beurré Hardy, and together they constituted a remarkably choice exhibit. 2nd, B. H. HILL, Esq., Crediton (gr. Mr. G. Lock), with smaller fruits. Pitmaston Duchess was very fine in this exhibit, but the best dish was that of Doyenné du Comice.

WILTS, GLOUCESTER, OXFORD, BUCKS, BERKS, BEDS, HERTS, AND MIDDLESEX.—*Apples:* Seven excellent exhibits were seen, the premier one being shown by Lord HILLINGDON, Hillingdon Court, Uxbridge (gr. Mr. A. R. Allan). In the 1st-prize collection, Gascoyne's Scarlet Seedling and Lord Derby were of high merit; Emperor Alexander, Warner's King, Cox's Orange Pippin, and Ribston Pippin were also choice fruits. 2nd, Mrs. CONEY, Braywick, Maidenhead (gr. Mr. Alfred Tidy).

Pears.—The same number of exhibitors staged as in the class for Apples, viz., seven, and the quality ran high throughout the seven. Lord HILLINGDON again won the 1st prize. A notable dish of Triomphe de Vienne was shown in this exhibit. Durondeau, Emile d'Heyst, Doyenné du Comice, Thompson's, and Pitmaston Duchess, completed the half-a-dozen varieties. 2nd, Mr. H. ST. V. AMES, Cote House, Westbury-on-Trym, Bristol, with Souvenir du Congrès, Hacon's Incomparable, and Doyenné du Comice as the better examples.

ESSEX, SUFFOLK, NORFOLK, CAMBRIDGE, HUNTS AND RUTLAND.—*Apples:* Only two exhibitors contested in the class for Apples, but the premier display constituted one of the best exhibits of Apples in the whole of the county classes. The fruits were not only of large size, but of high colouring and exquisite finish. They were Blenheim Pippin, Ribston Pippin, Stone's Apple, Mère de Ménage (a dish of highest merit), Peasgood's Nonsuch, and Warner's King. The exhibitor was Major PETRE, Westwick House, Norwich (gr. Mr. G. D. Davison). NICHOLAS R. PAGE, Esq., Thorness, Marine Parade, Clacton-on-Sea, was awarded the 2nd prize.

Pears. Major PETRE also excelled in the class for Pears, but the exhibit shown by Col. the Hon. C. HARBORD, Gunton Park, Norwich (gr. Mr. W. Allan), ran very close in point of quality. Major Petre had Doyenné du Comice, Emile d'Heyst, Triomphe de Vienne, Marguerite Marillat, Durondeau, and Pitmaston Duchess, and no dish could be regarded as below the very highest standard. Col. Harbord had Marie Louise d'Uccle of very large size, and Marguerite Marillat of superb finish.

LINCOLN, NORTHAMPTON, WARWICK, LEICESTER, NOTTS, DERBY, STAFFS, SHROPSHIRE, AND CHESHIRE.—*Apples:* Five exhibits were shown, the premier one by JOHN LEE, Esq., Kingscroft, Higher Bebbington, Cheshire, but an absence of colour was observed in the fruits, which, although large, had not such fine colour and finish as those shown by the Duke of RUTLAND, Belvoir Castle, Grantham (gr. Mr. W. H. Divers). Mr. Lee exhibited Lord Derby, Peasgood's Nonsuch, Warner's King, Gloria Mundi, Cox's Orange Pippin, and Ribston Pippin. Allington Pippin and Gascoyne's Scarlet Seedling were notable dishes from Belvoir Castle Gardens.

Pears.—The best of five exhibits was shown by the Marquis of NORTHAMPTON, Castle Ashby, Northampton (gr. Mr. A. R. Searle). Souvenir du Congrès and Beurré d'Amanlis were shown in condition fit for the dessert table, but Doyenné du Comice, Beurré Superfin, Beurré Baltet Père and Pitmaston Duchess were not in season. 2nd, Duke of RUTLAND, Belvoir Castle, Grantham (gr. Mr. W. H. Divers), who staged Triomphe de Vienne, Directeur Hardy, Marguerite Marillat, &c.

WORCESTER, HEREFORD, MONMOUTH, GLAMORGAN, CARMARTHEN, AND PEMBROKE.—*Apples:* A glance at the exhibits from these western counties sufficed to show their adaptability for Apple culture. All the fruits showed the delicacy of skin pertaining to fruits of the highest finish and quality, and in this respect they were probably unsurpassed by those from Kent. The best were from the gardens of F. P. NORBURY, Esq., The Norrest, near Malvern, his dish of Chas. Ross being of a high standard of quality, and of very large size. James Grieve was also excellent. The culinary varieties were Lane's Prince Albert, Bramley's Seedling, Lord Derby, and Bismarck. 2nd, G. H. HADFIELD, Esq., Moraston House, near Ross, Hereford.

Pears.—The last-named exhibitor was 1st for Pears with Souvenir du Congrès, Doyenné Boussoch, Emile d'Heyst, Durondeau, &c.

WELSH COUNTIES OTHER THAN THOSE NAMED.—*Apples:* The best exhibit of three was displayed by Sir GEORGE MEYRICK, Bart., Bodorgan, Anglesey (gr. Mr. Pilgrim). Neither the Apples nor the Pears from these Welsh counties calls for much comment. They were generally small, especially the Pears, the best of which were also shown by Sir GEORGE MEYRICK.

SIX NORTHERN COUNTIES OF ENGLAND, AND THE ISLE OF MAN.—*Apples:* One exhibit of Apples only was seen, and this was shown by JOHN BRENNAND, Esq., Baldersby Park, Thirsk,

York (gr. Mr. J. E. Hathaway). Worcester Pearmain and Lady Sudeley were the dessert varieties, and Lord Suffield, Ecklinville Seedling, Peasgood's Nonsuch, and Lord Derby the culinary varieties, the quality generally being mediocre.

Pears.—Mr. BRENNAND also won the 1st prize for Pears with no competition. He showed Doyenné Boussoch, Doyenné du Comice (very pale in colour), Souvenir du Congrès, Beurré Diel, Pitmaston Duchess, and Durondeau.

SCOTTISH COUNTIES.—**Apples:** There were two exhibits, and of these one was staged too late for judging, but this was the better of the two. The judges awarded the 1st prize to Mr. JAMES DAY, Galloway House Gardens, Garlieston, Wigtownshire, and the Council gave an equal 1st prize to Col. GORDON, Threave House, Castle Douglas (gr. Mr. James Duff). Col. Gordon had Lady Sudeley and Gascoyne's Scarlet Seedling of remarkably fine colour.

Pears.—The only exhibit of Pears was staged by Mr. JAMES DAY, and this was awarded the 1st prize. All were small and russety in appearance, Fondante de Thirriot being the best sample.

IRISH COUNTIES.—**Apples:** There were three exhibits of Apples from Ireland, but none of Pears. All the Apples were good examples, and greatly surpassed those from Scotland in point of quality. In the 1st prize exhibit of Mr. CLEMENT B. BROAD, Aghern, Conna, co. Cork, a dish of the variety Chas. Ross was grand, and he also showed good fruits of Bramley's Seedling, Peasgood's Nonsuch, Worcester Pearmain, &c. 2nd, THOS. O'DONNELL, Esq., Tinnakelly, Piltown, co. Kilkenny, with James Ross, Worcester Pearmain, Golden Spire, Bismarck, &c.

DIVISION VI.

SINGLE DISH CLASSES.

The following are the winners in the single dish classes for fruits grown in the open air. Six fruits in all cases constituted a dish. Nurserymen and market-gardeners were excluded from the competition. The figures in parentheses indicate the number of entries.

DESSERT APPLES.

Adams' Pearmain (11): The finest dish was shown by Lord POLTIMORE, Poltimore Park, Exeter (gr. Mr. T. H. Slade). **Allington Pippin** (15): A highly-coloured half-a-dozen fruits won the 1st prize for F. P. NORBURY, Esq., The Norrest, Malvern. **American Mother** (7): 1st, Mr. JOHN H. WOOTTON, Byford, Hereford, with fruits of the highest colouring. **Ben's Red** (2): An even sample staged by J. B. FORTESCUE, Esq., Dropmore, Maidenhead (gr. Mr. C. Page), was the finer. **Blenheim Pippin** (13): The best finished, but not the largest fruits, won the 1st prize. These were all of regular size and nicely coloured. The exhibitor was Lord FOLEY, Claygate (gr. Mr. H. C. Gardner). **Claygate Pearmain** (7): The fruits in this class varied greatly. The largest were shown by G. H. HADFIELD, Esq., Moraston House, near Ross, and these were awarded the 1st prize. **Cockle's Pippin** (2): The 1st prize was awarded to Mr. G. C. D. WEDDELL, Park House, Teddington. **Cox's Orange Pippin** (19): This popular variety was seen in diverse sizes and quality. Medium-sized, well-finished fruits from the gardens of F. P. NORBURY, Esq., The Norrest, near Malvern, were adjudged the best, and thus received the 1st prize. 2nd, H. G. WADLOW, Esq., Peterborough. **Egremont Russet** (8): Much the finer fruits were shown by W. E. S. ERLE DRAX, Esq., Olantigh Towers, Wye, Kent (gr. Mr. J. Bond). The fruits were coloured russety-brown on a clear yellow ground. **James Grieve** (10): F. P. NORBURY, Esq., Malvern, won in close competition with Col. ARCHER HOUBLON, who was placed 2nd. **King of the Pippins**: 1st, H. J. KING, Esq., Ashford, Kent (gr. Mr. J. G. Weston). **King of Tompkins' County** (8): The finest sample was disqualified as not being grown in the open. The award went to Mr. JOHN H. WOOTTON, Byford, Hereford. **Lord Hindlip** (4): Much the best sample was shown by H. J. KING, Esq., Eastwell Park, Kent (gr. Mr. J. G. Weston). **Margil** (7): 1st, G. H. HADFIELD, Esq., Moraston House, Ross, for the best coloured fruits. **Ribston Pippin** (25): The largest fruits were also the finest in point of quality, and these won the 1st prize for the

Earl of ASHBURNHAM, Battle, Sussex (gr. Mr. G. Grigg). 2nd, Mr. JAMES VERT, Saffron Walden, with large finely-finished fruits. **Rival** (2): 1st, Col. ARCHER HOUBLON, Welford Park, Newbury (gr. Mr. C. Ross). **Scarlet Nonpareil** (4): 1st, Mr. J. MCINDOE, V.M.H., Dartford, Kent. **St. Edmund's Pippin** (1): The only exhibit from J. B. FORTESCUE, Esq., Dropmore (gr. Mr. C. Page), received the 1st prize. **Wealthy** (9): A fine dish of this highly-coloured variety won the 1st prize for G. H. HADFIELD, Esq., Ross. Any other variety not named above (22): This brought forth a good competition, but the 1st and the 2nd prizes were taken by the variety Chas. Ross. Mr. EDGAR ROSS, Winchester, had the premier dish.

CULINARY APPLES.

Alfriston (1): JOHN LEE, Esq., Higher Bebington, Cheshire, was awarded the 1st prize for this variety. **Annie Elizabeth** (6): An even, clean-skinned sample shown by J. B. WINGFIELD-DIGBY, Esq., was awarded the 1st prize. **Beauty of Kent** (5): JEREMIAH COLMAN, Esq., Gatton Park, Reigate (gr. Mr. W. P. Bound), had the best fruits of this very irregularly-shaped variety. **Bismarck** (12): The largest and best coloured fruits were shown by F. P. NORBURY, Esq., Malvern, to whom the 1st prize was awarded. **Bramley's Seedling** (12): A clear-skinned, but green sample shown by Major PETRE, Westwick House, Norwich (gr. Mr. G. D. Davison), was awarded the 1st prize. **Dumelow's Seedling** (syn. *Wellington*) (8): This excellent culinary Apple was shown in the best form by JEREMIAH COLMAN, Esq., Gatton (gr. W. P. Bound). **Edward VII.** (1): 2nd, Mr. JOHN H. WOOTTON, Byford, Hereford. **Emperor Alexander** (8): The fruits shown by Mr. T. EDENBOROUGH, Elmhurst, Rayleigh, were slightly superior to those of W. E. S. ERLE DRAX, Esq., and were placed 1st. The remaining exhibitors were much behind these two mentioned. **Gascoyne's Scarlet** (7): It was easy to pick out the winning dish, shown by H. J. KING, Esq., Eastwell Park (gr. Mr. J. G. Weston). **Golden Noble** (5): 1st, Mrs. CONEY, Braywick, Maidenhead (gr. Mr. A. Tidy). **Golden Spire** (6): The largest and best fruits were shown by G. T. BATES, Esq., Whitfield, Hereford (gr. Mr. R. Grindrod). **Grenadier** (2): 1st, J. B. FORTESCUE, Esq., Dropmore, with a rather irregular sample. **Hambling's Seedling** (7): H. ST. MAUR, Esq., Stover Park, Newton Abbot (gr. Mr. Geo. Richardson), had fruits of almost double the size and quality of those of any other exhibitor. **Hector Macdonald** (1): 1st, Col. ARCHER HOUBLON. **Hornead Pearmain** (3): G. H. HADFIELD, Esq., Moraston House, Ross, was easily 1st for this variety. **Lady Henniker** (4): J. B. WINGFIELD-DIGBY, Esq., showed the winning dish. **Lane's Prince Albert** (15): This well-contested class resulted in F. P. NORBURY, Esq., winning with a magnificent dish. **Lord Derby** (8): Mr. NORBURY again excelled with a magnificent half-a-dozen fruits of this variety. **Mère de Ménage** (6): 1st, J. B. WINGFIELD-DIGBY, Esq. **Newton Wonder** (17): (Northern growers): 1st, Major PETRE, Norwich (gr. Mr. G. D. Davison). (Southern growers): 1st, F. P. NORBURY, Esq. **Norfolk Beauty** (4): Large well-coloured fruits shown by Col. C. HARBORD, Gunton Park, Norwich (gr. Mr. Wm. Allan), were adjudged the best. **Peasgood's Nonsuch** (16): This huge variety was shown in the finest form by W. E. S. ERLE DRAX, Esq.; 2nd, Mrs. CONEY, Braywick, Maidenhead (gr. Mr. A. Tidy). **Pott's Seedling** (7): 1st, J. W. PLATT, Esq., View Road, Highgate (gr. Mr. Chas. Turner). **Royal Jubilee** (4): The largest and best fruits were shown by J. B. FORTESCUE, Esq. **Stirling Castle** (11): Col. ARCHER HOUBLON showed the winning dish of this variety. **Tower of Glamis** (5): Much the finest dish was shown by J. B. WINGFIELD-DIGBY, Esq. **Wm. King** (12): Among keen competition, the 1st prize was awarded to A. P. BRANDT, Esq., Blethingley Castle, Surrey (gr. Mr. J. W. Barks). Any other variety than those enumerated (18): 1st, Gloria Mundi, shown by JEREMIAH COLMAN, Esq.; 2nd, Hollandbury, shown by J. B. WINGFIELD-DIGBY, Esq.

DESSERT PEARS.

Belle Julie (1): The 1st prize was given to the only exhibit, shown by the Dowager Lady HILLINGDON. **Beurré Alexander Lucas** (8): 1st, J. B. WINGFIELD-DIGBY, Esq. **Beurré d'Amanlis** (6):

1st, Col. ARCHER HOUBLON, for the largest and best fruits. **Beurré d'Anjou**: 1st, J. T. CHARLESWORTH, Esq., Nutfield Court, Surrey (gr. Mr. T. W. Herbert). **Beurré Bosc** (6): A keen competition resulted in the Earl of ASHBURNHAM winning the premier prize. **Beurré Dumont** (3): 1st, Lord HILLINGDON, Uxbridge (gr. Mr. A. R. Allan). **Beurré Hardy** (15): This well-contested class resulted in Sir EDMUND LODER, Bart., winning with a choice dish of this variety. **Beurré Superfin** (8): 1st, J. B. WINGFIELD-DIGBY, Esq., with highly-finished fruits. **Charles Ernest** (2): Very large fruits won the 1st prize for Lord POLTIMORE. **Comte de Lamy** (5): 1st, Dowager Lady HILLINGDON. **Conference** (9): Medium-sized fruits shown by JEREMIAH COLMAN, Esq., were adjudged the best. **Doyenné du Comice** (20): This keenly contested class exhibited fruits of great diversity in size and ripening. The winning dish easily out-distanced the others in quality, and were equal to orchard-house fruits. They were from the gardens of F. LEVERTON HARRIS, Esq., Camilla, Lacey, Dorking (gr. Mr. James MacDonald). **Durondeau** (12): 1st, Right Hon. Lord HILLINGDON, with a magnificent sample. **Emile d'Heyst** (9): 1st, Rev. H. A. BULL, Westgate-on-Sea (gr. Mr. F. King). **Fondante d'Automne** (3): Lord HILLINGDON was successful in this class, but the competition amongst the three exhibitors was very keen. **Fondante de Thirriot** (7): 1st, M. W. PRICE, Esq., Codicote, Welwyn (gr. Mr. T. Patman). **Glou Morceau** (9): Pale, flushed-red fruits won the 1st prize for F. E. CROFT, Esq., Stanstead Abbots, Ware (gr. Mr. G. Longhurst). **Josephine de Malines** (5): 1st, J. B. WINGFIELD-DIGBY, Esq. **Le Brun** (1): 1st, F. R. ROBB, Esq., Launceston. **Le Laitier** (7): The Earl of ASHBURNHAM had the winning dish of this variety in the largest fruits. **Louise Bonne of Jersey** (16): Magnificent fruits won the 1st prize for W. E. S. ERLE DRAX, Esq., the other samples staged being generally much below this in point of merit. **Marie Benoist** (3): 1st, J. B. WINGFIELD-DIGBY, Esq. **Marie Louise** (10): 1st, G. H. HADFIELD, Esq., Moraston House, Ross. **Nouvelle Fulvie** (4): Col. C. HARBORD, Gunton Park, won the premier prize with much the largest fruits. **Pitmaston Duchess** (15): Rev. H. A. BULL won with the biggest and finest-coloured fruits of this variety. **President Barabé** (6): The 1st prize was won by Col. HARBORD. **St. Luke** (1): 1st, J. B. FORTESCUE, Esq., with no competition. **Thompson's** (7): Lord HILLINGDON was successful in a good competition. **Triomphe de Vienne** (7): 1st, Lord HILLINGDON, in competition with other exhibitors, other splendid dishes of this variety. **Winter Nelis** (5): 1st, H. G. KLEINWORT, Esq., who had the biggest but greenest fruits. Any other variety than those enumerated above (31): 1st, Doyenné Boussoch, shown by Mr. W. A. VOSS, Rayleigh, Essex; 2nd, Gansel's Bergamot, exhibited by JEREMIAH COLMAN, Esq.

AWARD OF MERIT.

Raspberry Alexandra.—A very late variety of Raspberry, shown under this name by Col. the Hon. C. HARBORD, Gunton Park, Norwich (gr. Mr. W. Allan), was granted an Award of Merit by the Fruit and Vegetable Committee.

MISCELLANEOUS EXHIBITS.

Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, showed a collection of fruits, grown entirely in the open, and very similar to the two competitive exhibits in Class 14. The Apples and Pears were remarkable for their excellence. The Council awarded this fine collection a Silver-Gilt Hogg Medal.

Messrs. H. LANE & SON, Great Berkhamstead, Herts., showed some splendid vines in pots, well laden with bunches. They included a Prince of Wales Vine, 18 months old, bearing five bunches of 1½ lb. each; a fine black variety, Appley Towers, with 10 bunches; Diamond Jubilee, a black Grape bearing 12 bunches, some being 2 lbs. in weight; Melton Constable, two vines in 12-inch pots, bearing heavy crops; also Mrs. Pearson and Black Alicante, both heavily fruited.

Messrs. T. RIVERS & SON, Sawbridge-worth, showed bunches of Black Alicante Grapes on boards, the shape of bunch, colour, and bloom being alike good. This firm also showed pot-vines in fruit, the varieties being Golden Queen, Gros Colman, and Appley Towers.



THE

Gardeners' Chronicle

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APPLE LEAF-SPOTS.

DURING the past summer fruit-growers in many districts have been complaining that the leaves of a number of varieties of Apples have become affected with some disease which has turned the leaves brown in places and in some cases caused them to fall. Numerous examples of such leaves have been sent to me from a number of counties. After excluding those cases which showed, on microscopic examination, no disease attributable to any organism, and in which the "browning" appeared to be caused by some unfavourable atmospheric conditions, there remained a large number of cases in which it was evident that the damage was caused by certain definite species of parasitic fungi which had attacked the leaves. Some of these are still under investigation. The object of the present note is to draw attention to two definite "leaf-spots," and to the fact that they can be cured by spraying; also to ask growers who notice any injury appearing on Apple leaves during next season to kindly forward me examples of the same.

One of the commonest "leaf-spots" is that shown in fig. 120. This is caused by a

species of *Phyllosticta*. The disease is characterised by the presence of small, light-brown spots 1 to 3 millimetres across, usually circular, but sometimes oval. These brown



FIG. 120.—APPLE LEAF AFFECTED WITH "LEAF SPOT," CAUSED BY A SPECIES OF *PHYLLOSTICTA*.

spots, which usually occur in numbers on a single leaf, are composed of dead leaf-tissue which has been killed by the fungus, and are so sharply marked off from the surrounding leaf-tissue as to bear the appearance of having been stamped out. Scattered over the brown area can be seen a number of minute black dots. These, which are just visible to the naked eye, are shown enlarged in the photograph in fig. 121. Each black dot is a fruit-conceptacle, or pycnidium, as it is called, of the fungus (see fig. 122), and contains within



FIG. 121.—A SINGLE "LEAF SPOT" MAGNIFIED, SHOWING THE BLACK DOTS, WHICH ARE THE PYCNIDIA OF THE *PHYLLOSTICTA*.

it thousands of very minute, oval, colourless spores, each measuring 6 to 8 by 2 to 3 μ .

The second "leaf-spot" is represented in fig. 123. In this case larger areas of the leaf are killed, and form dark-brown patches of

irregular shape, such as is shown in the photograph in fig. 123. When a number of such areas occur on a leaf, or when a single dead patch is of considerable size, the whole leaf may shrivel up and fall prematurely. The fungus causing this "leaf-spot" is a species of *Sphaeropsis*. If the dead area of the leaf is examined with a lens, a number of minute black bodies can be seen breaking through the epidermis (see fig. 123). These bodies, which are usually arranged in a concentric manner, are the fruit-conceptacles, or pycnidia, of the fungus. Each pycnidium contains many hundreds of comparatively large, oblong, dark olive-brown spores, which measure 25 to 30 by 10 to 15 μ . (see fig. 124). The spores are borne, inside the pycnidium, on stalk-like conidiophores, which are often to be found attached to the ripe, or nearly ripe, spore (see fig. 124, d.).

These two "leaf-spot" diseases, caused by species of the two genera *Phyllosticta* and *Sphaeropsis*, have occurred this season on a number of varieties of Apples, and have been especially prevalent on Peasgood's Nonsuch, Cox's Orange, and Ribston Pippin.

In the case of several plantations which I have had under observation during the entire season, it has been very noticeable that these "leaf-spots" have been entirely absent from the trees which have been sprayed with Bordeaux mixture (for Apple "scab"), while occurring to an injurious extent on the surrounding trees.

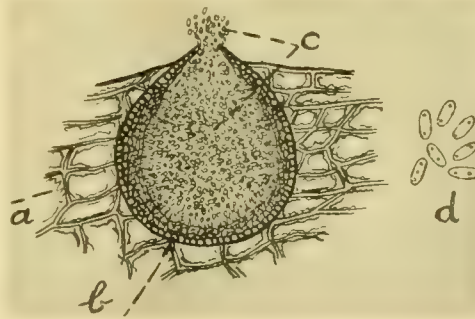


FIG. 122.—DETAILS OF THE *PHYLLOSTICTA* MAGNIFIED.

a, Dead cells of the Apple leaf; b, Section of a pycnidium; c, Spores; d, Seven spores highly magnified.

The "leaf-spot" caused by *Sphaeropsis* is of special interest, owing to the fact that a species of this genus, viz., *S. malorum* Pk., has been proved in the United States to be the cause of a distinct "canker" of Apple trees, which has been termed the "New York Apple-tree canker." This disease (which until lately had been ascribed to sun-scald) has been very destructive in New York State, as well as in adjacent States, certain varieties of Apples suffering heavily from the injury caused by "cankered" limbs. A full description of this "canker," which differs in several details from that produced by the common "canker"-fungus of our orchards, viz., the European canker *Nectria ditissima*, will be found in Bulletins Nos. 163 and 185 of the New York Agricultural Experiment Station. In the latter publication we read: "The leaves of Apple trees are occasionally attacked by a *Sphaeropsis*, when injuries appear in the form of round brown dead spots somewhat like those from burning by improper spraying with Paris green. This form

of *Sphæropsis* has not been definitely proved to be identical with *S. malorum*, but the indications are that it is the same."

Whether or not the *Sphæropsis* represented in fig. 123 is the *S. malorum* which causes a



FIG. 123.—APPLE LEAF AFFECTED WITH "LEAF SPOT," CAUSED BY A SPECIES OF SPHÆROPSIS.

special "canker" of Apple trees in the States, it is worthy of notice as being one of the fungi which is able in this country in certain seasons to cause a definite injury, in the form of "leaf-spots," to certain varieties of Apples.

It is to be noted, too, that *Sphæropsis malorum* is well known in the States as the fungus which causes the "black rot" of Apples, not only when the fruit is in storage but also in the ripening stage on the tree (see the Illinois Agricultural Experiment Station, Bull. No. 69).

definite "leaf-spots," there appeared the Farmers' Bulletin No. 283 of the U.S. Department of Agriculture on "Spraying for Apple Diseases." Here it is stated that the fungus diseases which are "quite destructive" in certain Apple orchards are "bitter rot," Apple "blotch," and "leaf-spot." Under "leaf-spot diseases" the following interesting remarks occur: "The disease may begin to appear in the spring, soon after the young leaves unfold, but the spots are usually more prominent between midsummer and the end of the season. This diseased condition causes the leaves to drop prematurely, frequently leaving the trees denuded in early autumn, six weeks or two months before the normal period of leaf-fall. Trees thus deprived of their foliage cease activity, and as a result the fruit is small and not properly matured; the buds for the crop of the following year are weakened, and in some cases not fully developed, and the life of the tree is materially shortened. These leaf diseases are partly responsible for the failure of the trees to produce crops and for the early decline of the orchard. Leaf-spots are due to several different fungi, perhaps the most prominent of which is a species of *Phyllosticta*. A species of *Hendersonia* and the ordinary 'black rot' fungus, *Sphæropsis malorum*, are found in conjunction with some of the spots, and may be responsible for the injury in some cases. These leaf-diseases are largely prevented by application of Bordeaux mixture, and the foliage remains fresh and green long after unsprayed trees are defoliated." Two good applications of Bordeaux mixture are recommended, the first application about two or three weeks after the petals have fallen, and the second about seven weeks later.

It appears, therefore, that in the States the injury caused by "leaf-spots," such as those shown in figs. 120 and 123, if not actually identical with them, is sufficiently serious to demand spraying. It is quite possible that with the constantly increasing acreage of Apples in England, growers in this country will be obliged to have recourse regularly to the same measures. It is certain that in many dis-

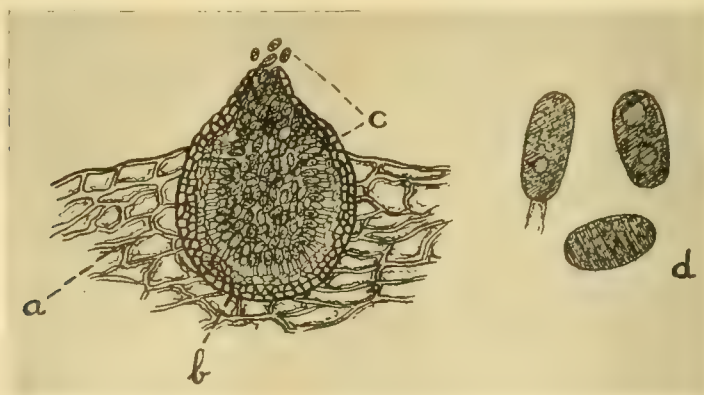


FIG. 124.—DETAILS OF THE SPHÆROPSIS MAGNIFIED.
a, Dead cells of the tissue of the leaf; b, Section through a pycnidium; c, Spores;
d, Three spores very highly magnified.

Whilst I was investigating during the past summer the "spotting" and "browning" of Apple leaves, and after I had ascertained that the species of *Phyllosticta* and *Sphæropsis* described above are the cause of two

tracts this season it would have paid well to have sprayed against Apple "leaf-spots." *E. S. Salmon, F.L.S., Mycologist to the South-Eastern Agricultural College, Wye, Kent.*

THE PROPAGATION OF MONTBRETIAS.

THE beautiful new hybrids of *Montbretia* do not naturally increase so readily as many of the older kinds; the following remarks may therefore prove useful.

Plants that have been grown in the open border should now be lifted very carefully, and, after being divided, be potted into small pots in a light, sandy compost, and be afforded a greenhouse temperature. At the time of lifting the corms, it will be found that some of the stronger plants have developed one or more long underground stems very much resembling Couch Grass, but considerably stronger and thicker. These shoots have always a few root fibres present along their sides. These rhizomes should be detached from the bulb, and be potted separately with just the point of the shoot protruding above the soil. If the pots are placed on a shelf in an intermediate house, the shoots will continue to form roots, and in the spring the plants will be growing freely. The corms which have been potted should show no signs of growth until early in the spring, when, besides the centre shoots, several underground stems will appear along the sides of the pots. When these shoots are 1 inch or more above the level of the soil, the plant should be turned out of its pot and the side growths be cut off with a few root fibres attached, but without disturbing the ball of earth around the parent bulb.

These small, rooted suckers should be placed into small pots; in the spring, they will require a shift into larger receptacles. If the weather is favourable they may be planted direct from the small pots into a well-prepared bed in the open. Many of these plants will flower the first season after planting, and will form good corms, from which a plentiful stock can be obtained the following year. *Montbretias* prefer a sunny position in the flower-garden, and, during dry weather are much improved by a mulching and copious supplies of liquid farmyard manure. The newer hybrids form elegant subjects for pot-culture, either when grown singly or several together. *W. H. Clarke, Aston Rowant, Oxon.*

FLORISTS' FLOWERS.

THE BEST CHRYSANTHEMUMS SENT OUT SINCE 1903.

As a result of an election by the members of the Paris Chrysanthemum Committee, organised early in the year, a list of the best novelties since 1903 has just been published in the journal supplied to its members. Of course, English growers would probably add others, but it is interesting to record the names of some of those that obtained the greatest number of votes.

There were 34 votes in all, and upwards of 200 varieties received from three to 30 votes each. These appear in the audit, arranged in order of name of variety, raiser, date, and number of votes given in each case. The most successful are the varieties obtained by Calvert, Marquis de Pins, Nonin, Durand, Wells, Jones, Vilmorin, Chantrier, and several others not widely known in this country.

Out of the 200 I have selected the first 30; these obtained from 30 votes to 18, and are *Sapho*, *Mme. Marguerite de Mons*, *Mme. René Overthur*, *Lt.-Col. Ducroiset*, *President Viger*, *Tokio*, *Jean Calvat*, *Souvenir de Bailleul*, *Ch. Schwartz*, *Mme. Henri Douillet*, *M. Ant Marmontel*, *La Gracieuse*, *President Loubet*, *Le Brévannais*, *Alliance*, *Souvenir de Mme. Buron*, *Nathalie Bourseul*, *Ami A. Nonin*, *Albert Maumené*, *Rose Poitevine*, *M. Loiseau Rousseau*, *Henri Second*, *Souvenir de Calvat Père*, *Mme. Toussaint*, *Charvet*, *Vierge Montbrunoise*, *Amateur Rozières*, *Mme. de la Verbeville*, *Mlle. Renée Avisard*, *Ville de Phénicie*, *Mrs. J. A. Miller*. *C. H. P.*

CULTURAL MEMORANDA.

THE BOUVARDIA.

THE culture of the Bouvardia is much simpler than that of many commonly-grown flowering plants which yield fewer blossoms in return for an amount of labour bestowed upon them than is necessary in the case of the Bouvardia. Plants may be had in little more than six months from the time of inserting the cutting, measuring 2 feet in diameter and the same in height. If these be grown a second year they will reach a size double that mentioned, but for general decorative purposes in the conservatory or dwelling-room, yearling plants are to be preferred. Propagation is readily effected by cuttings which are best secured from old plants that have been pruned hard back, as in the case of an old Fuchsia. The pruned plants should be placed in a warm moist plant-house, in February. They will soon form new growths, and these will furnish the cuttings which should be taken off about 2 inches long, and preferably, but not necessarily, provided with a heel. Well-drained pots, having a diameter of 5 inches, should be filled with a mixture of leaf-mould and sand, the cuttings inserted, and be placed upon a hot bed. Roots will form readily, and potting must be done before the roots become matted together. Thumbs or small sixties will be suitable pots, and the compost should consist of equal parts leaf-mould and fibrous loam, with a free addition of sand. When potted, return the plants to the hot-bed. The leading shoots should be regularly pinched in order to promote a bushy habit of growth, and when they have filled their pots with roots a shift into 4-inch pots should be afforded, using at this stage a mixture of loam and peat in equal proportions with sufficient sharp sand to keep the compost open. Should peat not be available, leaf-mould may be used in its place; I have seen Bouvardias do very well when this material has been substituted for peat. After a time, when the heat has declined in the hot-bed, they may be removed to a cold frame, and placed as near to the glass as is convenient. Syringe the plants overhead, and close the structure early in the afternoon to retain the sun's heat. At their final potting they should be afforded 6-inch pots, and this should take place not later than the end of July if the plants are intended for early winter flowering, but it may be deferred a fortnight if flowers are not required so early. Use a compost similar to that in the 4-inch pots. As the summer advances, the plants should be plunged in some open material such as leaves, in order to keep the roots cool and prevent a sudden drying of the ball. The Bouvardia requires plenty of moisture at its roots, and the foliage should be frequently syringed during the summer months. At this stage the lights should be removed from the frame both day and night; in fact, no frame is needed. The pinching of the shoots must be regularly performed, for growth is vigorous throughout the summer till the end of August. There is often a difficulty in preventing Bouvardias running to flower in a hot dry summer; this is owing to the plants having too much sunlight, which ripens the wood quickly. This precocious blooming may be prevented by plunging the plants in the manner described, and protecting them from full exposure to the sun at midday.

For flowering in November and December the plants should be housed about the end of September in a plant-house having a temperature of 50°. As the flowering shoots appear the plants should be given a stimulant such as manure water. This should be very dilute and be applied at frequent intervals. When flowering is over the plants should be gradually brought to a resting condition, and be placed in a cool house. When they are to be started into growth again the shoots should be cut back to about the second node, and the plant be grown on as recommended above.

Bouvardias may be propagated from roots at the same time of the year as from stem cuttings. The old plants should be freed from soil and the thickest of the roots cut into portions about an inch long. These pieces should be placed near the surface in sandy soil in pans and about an inch apart. Their after treatment will be the same as in the case of stem cuttings. Amongst the best varieties for winter flowering are Alford Neuner, Elegans, Hogarth, Dazzler, Maiden's Blush, Jasminoides, President Garfield and Vreelandi. H. R. W.

BURGHLEY HOUSE.

THIS beautiful historic mansion, the seat of the Marquess of Exeter, is situated near to the town of Stamford. It stands in a well-wooded park of several hundreds of acres, the scenery of which is most beautiful. Double avenues of Lime trees and Elms afford a natural shade in the summer to the browsing cattle and deer.

The pleasure grounds, which are very extensive, contain some fine specimens of the Cedar of Lebanon, and bold groups of flowering shrubs, many of which are planted near to a lake. A dell in the pleasure grounds contains a rock-garden, and, during hot weather, provides a cool and refreshing walk. Large banks of the common Laurel, planted by the sides of the paths, form a feature in these gardens. They are well trained, and as the pruning is performed by means of the knife, much labour is involved in their trimming. Rambling Roses, trained on iron arches, are another notable feature, and these plants grow with the greatest freedom. Plants of the variety Crimson Rambler are trained to represent a tent, the chains forming the design being entirely covered with the plants. Large flower-beds, near the mansion, are planted with Violas in varieties of different colours; Pelargoniums, Fuchsias, Heliotropes, and Lobelia compacta var. Kathleen Mallard appeared extremely pleasing at the time of my visit—the last day in September. Tropæolum speciosum, planted on the north side of a Yew hedge and sheltered by a belt of trees from rough winds, was a beautiful object. A wild garden is in course of planting, and this will add greatly to the beauty of these woodland pleasure grounds. There are three plant houses near to the mansion, and these are occupied by plants suitable for room and table decoration.

The kitchen gardens comprise an area of more than 12 acres. Among the vegetables was 'hou de Burghley Kale, which was raised at these gardens some years ago. I noticed one border 60 yards long planted entirely with "Horace Martin" Chrysanthemum, the plants being a mass of flowers.

Peach trees were seen on walls in the open in great quantities, and they were carrying heavy crops of well-finished fruits. The varieties Princess of Wales and Sea Eagle are grown for a late supply. Pears and Apples were fair crops, although their number was below the average for Burghley.

The glass structures are extensive and comprise several span-roofed houses, each 45 yards in length. Tomatoes and Cucumbers were planted out in one house, and another was filled with winter-flowering Carnations. These Carnations were planted in 6-inch pots. A batch of Begonia Gloire de Lorraine, and another of Euphorbia (Poinsettia) gave promise of a fine show of flowers later. Plants of Calanthe Veitchii were fast maturing their large, healthy pseudo-bulbs, which appeared capable of developing good flower-spikes. One house was filled with pot plants of Myosotis.

Another span-roofed structure had two side stages filled with the scarlet Raspail Pelargonium. The plants were covered with flowers over a groundwork of Adiantum Ferns. Pits and frames accommodated Strawberry plants;

these will furnish a succession of fruits to those grown in pots. A frame contained a large batch of Cyclamen just showing their flowering spikes.

Several glasshouses are devoted to the culture of fruit, including Grapes, Peaches, Nectarines, Figs and Melons, the last-named being grown on square turves placed upon slates as a preventive of canker.

Chrysanthemums were strong and healthy, and appeared capable of producing excellent blooms in their season. In several lights are grown Violets on long manure placed on fagots, and with a covering of loamy soil on top. Under this treatment the plants furnish an abundance of good flowers. Mr. T. Grant, the gardener, has made several improvements in the kitchen gardens, and also in the pleasure grounds during his tenure of service, and he is to be congratulated on the excellent condition of the gardens at Burghley House. T. W. B.

PLANT NOTES.

ASPARAGUS PASTORIANUS (ASPARAGUS ALBUS).

THERE exists in certain remote parts of Teneriffe, and in one locality of the Canary Islands, a species of Asparagus known as Asparagus Pastorianus, a plant very similar in growth to that of a miniature Pseudo-larix. The "leaves" (cladodes) are of a bluish-green tint, the root is a fleshy tuber not unlike that of a Dahlia, only smaller, and the seed is enclosed in a red fleshy berry. The finder, Mr. Oskar Burchard, seedsman at Orotava, brought a number of living plants to the town, and he has also raised others from seeds. The plant does not suffer greatly by the rough removal from the soil in which it is found wild, and it soon begins to grow when potted. A year-old plant makes a pretty decorative object for the dwelling-room. The plant is not a climber, but has a bush-like habit of growth not generally seen in the species of Asparagus cultivated in glasshouses. Although an erect-growing species, the lateral shoots are drooping, and these are covered with a white coating which gives an appearance suggestive of ivory. For a certain length of time the branches are destitute of side shoots, and then the latter appear, and are followed by soft linear "leaves" about 5 cm. in length. They stand about an inch apart and are united in bundles of 30 or more. The branches of strong plants grow to a length of 3 feet, and by the rapid production of shoots the plant soon makes a bush of considerable breadth and regular form. By stopping the side growths an erect pyramidal or columnar habit is obtained, or by a timely stopping of the leader, a drooping or a grotesque plant is equally readily formed. As a consequence of its possessing fleshy corms, the plant is but little influenced by changes in the amount of moisture present in the soil. Shoots are produced during the greater portion of the year till the flowering season is passed at the end of the summer, when a season of rest, lasting for several months, should be afforded. The plant at that season loses a small portion of its "leaves," but it still remains green. The flowers appear in numerous little clusters, and are stellate in form, white, and very fragrant. The berries become of a purple colour in the winter season. The management of the plant is very simple. The seed retains its germinating power for several months and should be sown in small pots singly or several together, and the seedlings shifted once or twice during the first year. It is advisable to employ sandy loam at the first potting, but a more nutritive loamy soil should subsequently be used.

The plant ought in the winter to be staged close to the glass, and kept dry for the first few months; indeed, complete dryness at the root is not injurious to its well-being. The plant is figured in *Möller's Deutsche Gärtner-Zeitung*, No. 31, 1907. F. M.

THE FERNERY.

THE DISTRIBUTION OF FERNS.

As the result of observation made during a recent Fern-hunting trip to Cornwall, I was much struck by the apparently entire absence of several species of Ferns over a considerable range of country where suitable habitats for them abounded. The Wall Rue—for instance, *Asplenium Ruta-muraria*—is so adaptive a little Fern that, even in the vicinity of London, we may find it on old walls, in some places in abundance, and in most of our expeditions north and south, east and west, it has figured in my list of species. Both in North Cornwall, Camelford to Tintagel and Boscastle districts on this occasion, and in

account for, especially when we consider the easy transference of spores by the wind and the apparent identity of conditions which prevail in the lanes in question, yet in many of them a careful search would not reveal a single Harts-tongue, and then suddenly I would come across a long stretch in which it would be abundant, only to cease as abruptly as it commenced, its companion Ferns, Male Ferns, Lady Ferns, Broad Buckler, and Hard Ferns, however, would continue without interruption, thus indicating no great change in these conditions which favour Fern life. Here and there, too, small colonies of the Lemon-scented Fern, fine strong plants, would be found, but only for fifty yards or so, and *Lastræa oemula*, the pretty crispy Hay-scented Fern, was equally erratic and sporadic,

but on crossing the high road all were found to be normal again. A narrow papery fronded somewhat serrate *Blechnum* (*B. s. strictum*) turned up as a fine tuft among the normal plants in one lane, and about half a mile away, in another lane, its counterpart appeared, these being the only variants in this species among the thousands inspected. *Lastræa montana*, though by no means abundant, furnished a very marked crispate variety, and it is worthy of note as an encouragement to those who are endeavouring to suppress the wholesale raiding of Ferny habitats by vandalistic market purveyors, that this plant, being of some size, I was advised by my guide to cut off the fronds and make a parcel of the roots to avoid the risk of being wrongly classed, as some prosecutions had been instituted in the district. Since, however, a whole week's bag only filled a cubic foot biscuit box, my conscience did not prick me, though I adopted the precaution suggested for fear of setting a bad example. Incidentally, on my return journey to London, I paid a visit to the place on Dartmoor where 19 years ago I found *L. montana cristata gracilis* Druery, and was afforded thereby a singular piece of evidence as to change of land surface in course of time. That Fern when originally found grew on the bank of a stream running off Dartmoor, the bank sloping at such an easy gradient that, sighting the Fern from a path above, I walked down and inspected it. To-day there is so precipitous a dip that no slope at all exists, and I could only reach the stream by a detour, the place where the Fern was found being now the stream bed, the course being altered to that extent purely by natural means. Singularly enough, in searching for a possible seedling of my former find, a very marked sub-plumose plant of the same species was found on the almost perpendicular bank, within a few yards of the site of the first discovery. From the varietal point of view, I consider my bag a poor one—i.e., as compared with those obtained in other years—though it consists of *Lastræa montana crispata*, *L. m. sub-plumosa*, *Blechnum spicatum strictum*, *Scolopendrum vulgare*, a possible *ramo-cristatum*, but too small to be sure of, a very singular form with oval fronds, the midrib tapering off to nothing in the middle of the frond, which finishes off roundly, and a sub-lineatum with crenate edges. These and a specimen of *Polypodium vulgare serratum* constitute the list. Chas. T. Druery, V.M.H., F.L.S.



FIG. 125.—FLOWERING SPRAY OF PRUNUS SPINOSA; THE BLACKTHORN, OR SLOE.

South Cornwall, the Falmouth district last year, this little Fern was conspicuous by its absence on innumerable suitable walls and dykes, not a single example being found anywhere. *Asplenium trichomanes* and *A. Adiantum-nigrum*, its usual companion in Ferny districts, were, however, plentiful. *Polystichum angulare*, the soft shield Fern, an extremely common Fern in Devonshire, the adjoining county, where it prevails in abundance in precisely such shady green, deeply embowered lanes as are common in Cornwall, only supplied a single specimen in a week's hunting, this, strange to say, being a fair-sized plant, though not even a seedling was detected anywhere else. The apparent waywardness of some species is also difficult to

half-a-dozen plants appearing at short distances and then no more for miles, though the lanes, as we have said, presented little or no apparent change as regards shade and humidity. The common *Polypody* (*P. vulgare*) appeared everywhere more or less abundantly, and was, to the Fern hunter, annoyingly constant to the simple normal type, not a sign of variability turning up amid the many thousands of plants inspected until I turned down a lane a little to the west of Camelford, when almost without exception a serrate and even sub-bipinnate robust form fringed the walls, and hung pendent from the hedge tops or the trunks and branches of the wayside trees; two lanes scarcely showed a normal smooth-edged frond,

PRUNUS SPINOSA L.

The common Blackthorn, *Prunus communis* Huds., is too well known to require a lengthy description. Several sub-species or races have been distinguished, the chief being the Sloe or Blackthorn proper (*P. spinosa* L.), which is represented in our illustration (fig. 125), and the Bullace (*P. insititia* L.). The latter is more widely distributed than the Sloe, and it extends beyond the confines of Europe into N. Africa and into Asia.

The flowers afford interesting examples of adaptations to cross-pollination. The stigma is already receptive before the flower is fully open, and it projects well in front of the half-unfolded petals, whilst the stamens are still in-rolled, so that their anthers point in towards the centre of the blossom. As the flower expands, the style continues to grow for a while, thus keeping the stigma well out of the way of the stamens as they successively unfold. During this period the flowers may easily be cross-pollinated by any of the insects that chance to visit them. Later on, however, self-pollination may be effected, either by the insects or by pollen which happens to fall from the stamens on to the still receptive stigma.

Cut sprays of Blackthorn, when properly treated after the Japanese fashion, form very effective and decorative objects for the house at a time when it is not easy to obtain much floral variety. It seems not to be generally known that this plant, like its relatives the Apple and Pear, readily lends itself to simple forcing. The blossoms are fully formed by the end of the autumn, and if the sprays are cut early in the year, whilst the flowers are still enclosed in the winter buds, they can easily be forced into flower by keeping them in water for a time in a warm room, and the flowers thus produced will last much longer than those which naturally unfold later on in the spring.

THE NEWER VARIETIES OF FRUIT.

THE planting season being now at hand, the following particulars of new fruits, describing the experiences gained in my nurseries, may be interesting. Among dessert Apples Langley Pippin proves a very useful early kind, a good bearer, of free growth. James Grieve seems to improve, and it is certainly one of the best varieties for late in September and during October. It may best be described as an early Cox's Orange Pippin. Belle de Boskoop bears freely, and is a large russet-coloured fruit of rich flavour. Charles Ross succeeds in a cold season better than Cox's Orange Pippin, but the fruit is too large for dessert, especially if grown on young trees; when trees have become older and are well cropped the variety may prove of value. Coronation, however, is one of the most promising seedlings which have been obtained from Cox's Orange Pippin. The fruit is handsome and the tree is apparently hardier than Cox's Orange Pippin; but it does not bear well at so young a stage. Rival is a great bearer, and, I think, the best that Mr. Ross has raised. I find it to be of good flavour. Ballinora may be said to be a scarlet-fruited Blenheim Pippin, of rich flavour, and a better bearer when young than its parent. The Houblon has not yet fruited with me. Allington Pippin, Jas. Grieve and Ben's Red are finding great favour with market growers. By the way, in the *Daily Telegraph* for October 12 it was stated that "nurserymen do not cater for the market growers." This is far from the fact. But the writer is not, perhaps, aware of our difficulties. For instance, a grower may want a large number of one kind that is seldom asked for. It takes three years to work up stock, and it has often happened that when we work heavily on the desired sort the growers have altered their minds, and we are left with thousands of two-year-old trees, for which there is no demand. If they would let us know three years ahead, any nursery could supply them. No outsider has any idea of the sudden changes in popularity which take place among the market growers or dealers. For example, Newton Wonder is far and away a better Apple in all respects than Bramley's Seedling, yet the growers will prefer Bramley's, and therefore have to wait two years longer for a crop.

To return to recent kitchen Apples, I consider Early Victoria one of the very best early Codlins, an enormous and regular bearer, although not new. Biel Borodawka is, for private gardens, far better than Duchess of Oldenburg, for use in September and October. Hector Macdonald, one of Mr. Ross's latest varieties, I believe, has a great future before it, as it is practically a Lane's Prince Albert, but of more vigorous, sturdy habit, and an equally good bearer, even at two years old. Norfolk Beauty is a splendid large and free-cropping Apple of excellent cooking quality; for use in October, November, and December. It does not fall in a tart, and has a very free-growing habit. Edward VII. may be called an improved Golden Noble; it is a free bearer. Lord Stradbroke has not yet fruited; it will prove a fine exhibition fruit for placing in the back row. Byford Wonder is fast growing in popularity as a late large green fruit. It is of sturdy and free-growing habit.

The only recent Pear will be the new "Santa Claus," to be sent out this season, and may best be described as a Doyenné du Comice, for use at Christmas. The growth is very promising, and it appears most fertile. Le Brun and Beurré Alexander Lucas are very fine, though not recent. Charles Ernest, which one might call a late Pit-maston, is very fine. An early and little-known, free-cropping, green Pear for August is Aspasie Ancourt, of very sweet flavour. General Wauchope and R. D. Blackmore, introduced by Mr. Chas. Ross, are very promising, but they have not yet fruited with me. St. Luke is a handsome Pear, of good flavour, but it requires

watching, as it is apt to become ripe before it appears to be so.

A very fine November Pear, but little known, is Belle Julie; while the September Marguerite Marillat gives every satisfaction. Doyenné du Comice still stands pre-eminent. It is somewhat surprising that the crop of Pears is so good this cold season, when Apples have suffered so severely; but many are very much spotted, except where cultural conditions have been properly observed. This may be due to the Pear foliage being shiny or varnished, so to speak, and thus allowing the wet to pass quickly over it; while Apples, being rough and hairy, retain moisture a longer time.

In Peaches, the Earliest of All came first to pick, and from its robust habit it will prove valuable. Duchess of Cornwall succeeds it, and is a very fine early fruiter. No other variety calls for special remark, but Devonian Late is a fully-flavoured late kind, whilst Rivers' Peregrine and Thomas Rivers are sorts to be relied upon.

No new Nectarines have called for notice. We still lack one of the stamp of Early Rivers, of free-stone nature. At present Darwin is the best white-fleshed, and Pineapple the best yellow-fleshed, variety.

In Plums, Rivers' Admiral, Primate, and President are kinds all should grow; and the Japan Mirabelles are worthy of being placed against a wall. The new primrose-coloured Shiro is as large as Oullin's Golden Gage, and of rich flavour. Burbank seems to fruit freely when the tree is well off the ground, and for cooking purposes it is very rich and Apricot-like in flavour; very fine for cool orchard-house culture. Burbank's Giant Prune is a good bearer, and is capable of hanging late. It resembles a small Pond's Seedling Plum, and is very firm and will cook well. Messrs. Veitch's Langley Black Bullace proves vigorous in growth (maidens 6 to 9 feet), and being very late and a great bearer, it will be in demand.

In outside fruits, Messrs. Veitch's Madhi Beury is of good flavour, and ripens at a time when such fruits are wanted. The Logan Berry is now grown largely for market sale.

In Raspberries, I have not seen any that call for special notice.

Of Strawberries, Reward and the Bedford have done well. Laxton's Latest is very fine, but not a heavy bearer with me. Givon's Late is still the best large fruit for the last pickings.

No new Cherries have come to the front; in fact, they are so good that we cannot do better than plant recognised sorts.

I have heard the remark that "no fruits have been up to their usual standard in flavour this season," showing that no care and extra cultivation can atone for the want of genial sun heat and light. For the same reason the rich colour we generally get in Apples and Pears will not be attained this season.

Advantage should be taken to thin out the branches of all fruit trees as soon as possible to ripen wood and plump up the buds for 1908, which at present promise an abundant blossom. *George Bunyard, October 14.*

TREE PLANTING.

GROUND that is intended for planting trees and shrubs should be dug deeply from end to end, and if necessary, trenched, though planting at once on newly-trenched ground is not to be recommended as a period should elapse to allow the soil to become properly settled. If small forest-trees, such as Larch, Spruce, &c., are to be planted, ploughing the ground will suffice, but the subsoil plough should follow if necessary to break the ground to a sufficient depth for the roots of these plants. It should always be remembered that any extra labour expended in the preparation of ground for planting permanent subjects is amply repaid by the in-

creased growth of the plants afterwards. For isolated trees and shrubs, or in the case of land that has been properly prepared in former years, it will be necessary only to dig holes of a sufficient size to accommodate the roots of the plants. The shape of the hole is immaterial, the chief point is to make them of a sufficient size and depth. The planter should endeavour to provide his plants with sufficient space for at least two years' root development in well-broken ground that has been enriched by the addition of manure, leaf-mould, or good loam.

PLANTING.

This operation should not be hurried, for it is not wise to waste time and money in preparing ground and purchasing plants, and then to negate the result by improper planting. It must always be remembered that, however carefully transplanting is performed, some of the roots are certain to be broken or injured by the spade, and every care and attention is necessary to enable the plant to repair the damage and to put forth new roots. Before a tree is placed in the ground the roots should be trimmed with a knife, and have all bruised and ragged ends severed by a clean cut. The roots should be carefully spread out, and have some of the finer soil worked amongst them by the hand. This is especially important in the case of a thick mass of roots from which all the mould has been shaken, for, if they are not separated and brought into contact with the soil, many of them will decay. Particular care should be exercised in this respect when planting large deciduous trees, as, in addition to their possessing a large number of roots, the latter often spring from the crown of the tree in such a manner that a hollow place may be left just under the bole, and this tends to keep the roots dry, and also renders the tree liable to be moved by high winds. After the hole has been filled in again the ground should be trodden as firmly as possible, except in very wet weather, but it should receive a final treading when the soil has dried somewhat. Planting is best performed when land is on the dry side, as the soil then works much more easily, and the roots lay hold of it more readily.

STAKING.

Trees should be properly staked after planting to train them upright, and to hold them firmly. A tree that is blown about by every wind shifts at its base, and thus prevents the roots from getting quickly hold of the ground. A single stake is sufficient for small subjects, but for trees of a considerable size three stakes arranged in the form of a triangle some distance from the stem, and brought together just below the head, should be used. Placed in this manner the stakes prevent the tree from moving in any direction. A piece of old mat or sacking should be put around the tree where it is tied to prevent the bark becoming injured by rubbing against the poles. *J. Clark, Bagshot, Surrey.*

FRUIT REGISTER.

APPLE GOLDEN SPIRE.

I WOULD strongly recommend this early Codlin Apples as a tree of compact growth, capable of giving a maximum amount of fruit from a minimum of space. The tree is of upright habit of growth, not vigorous, and in appearance may be likened to a tree midway between Keswick Codlin and Lord Suffield, smaller than the latter yet larger than the former. In colour the fruits are an ordinary Codlin yellow, the quality is all that can be desired, and the fruits are in season at the end of July. *S. P.*

APPLE MANK'S CODLIN.

FOR home consumption, and especially in gardens where space is limited, this is a suitable variety of Apple for planting. Quite small trees crop freely, and the quality of the fruits is all

that can be desired; indeed, when roasted whole, there is a pleasing flavour which I do not find in any other Apple. The fruit has a yellow skin that is flushed with crimson on the sunny side. This is the only variety of Apple that, to my knowledge, succeeds from cuttings; trees raised in this manner, although requiring many years to reach the fruiting stage, bear heavy crops. *E. M.*

FIG CULTURE.

If there is only room for one tree, I would, without the least hesitation, recommend Brown Turkey to be planted, either under glass or outside on the open walls. There are several other varieties that succeed well under pot-culture, but how far some of these would succeed if given a good position out-of-doors I do not know. I have grown White Marseilles out-of-doors, and, although it has borne fairly heavy crops, the fruits were never so plentifully produced as those of the Brown Turkey, and to keep the trees in anything like fruiting order the roots had to be repeatedly pruned, otherwise the trees grew too strongly to bear well. The same may be said as regards the variety growing under glass, notwithstanding the Figs of this variety are exceedingly rich and good. Brunswick, with its large fruits, succeeds very well, and in some of the more favourable parts probably stands next to Brown Turkey, but, like all Fig trees, it requires plenty of room for extension, otherwise it is a shy bearer. I have grown in pots, with good results, Black Ischia, Bourjassotte Grise, Malta, Negro Lagro, White Ischia, and other varieties.

I think it would be interesting if those fruit-growers who have made a speciality of Figs in the open were to record their experience with reference to the different varieties.

The heaviest crops of Figs out-of-doors which have come under my notice have been from trees whose root run has been hard and somewhat restricted. In the neighbourhood of Margate Figs grow well in the open, needing but little care and attention, and the fruits produced are excellent in every way. The soil is rather shallow and rests on deep chalk. At Falmouth, a few years ago, I saw a tree growing on a lawn, and the crop was enormously heavy, while under glass at Preston Hall, Kent, heavy crops could be seen growing on trees which had been planted on a back wall and allowed to grow to the top, and then the shoots trained in a downward direction at a distance of about 18 inches from the glass. *H. Markham, Wrotham Park, Barnet.*

THE HARDY FLOWER BORDER.

SILENE FORTUNEI.

THIS Chinese species is one of the most elegant plants of the whole genus, and is especially valuable as an autumn-flowering plant. At the present time it is in full beauty, and promises to last in good condition still longer. It grows to a height of between 2 to 3 feet, and as it branches freely, forms a compact bushy plant covered with loose panicles of erect flowers. These vary from very pale to rose-red in colour, are about 1½ inches in diameter, and have deeply lacinated petals. Although it is a perennial, and will stand the winter, the best results are obtained from plants, the seeds of which have been sown in heat early in spring, and planted out as soon as they are large enough. They grow rapidly in any light rich soil during the summer, and commence flowering in the month of September. It is said to be a common Chinese plant, and was first found by Robert Fortune after whom it was named; but it was not introduced into this country till the year 1898, when seeds which had been collected in the province of Shensi by Father Piccoli were received at Kew. These germinated, and the plants flowered in September. The figure in the *Botanical Magazine*, t. 7649, was prepared from these. Like so many other members of this family, the stems are covered on the upper portions with a viscid substance. As a cut flower it is light and graceful, and lasts well in water. *W. I.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Surrey.

Habenaria pusilla.—Amongst Orchids now in bloom at Burford, a group of about 60 plants of *Habenaria pusilla* (*militaris*), many of them having several flower-spikes from one pot, are the most conspicuous, the dwarf, bright, cinnamon-scarlet heads of bloom presenting a very gay appearance. For many years past this terrestrial species was considered very difficult to cultivate, but now that its requirements are more generally understood, little difficulty is experienced in the management of the plants. When the flowers have faded the foliage will begin to wither, and eventually the stem will die down; during this natural decay water must be gradually withheld. Place the plants on a dry shelf exposed fully to the sunshine, so that the newly-formed tubers may ripen thoroughly. It is not advisable to cut off the leaves or stem whilst they are in the act of decaying, but they should be allowed to dry off, as is usually done with *Caladiums*. The critical period is during the winter, as over-dryness will cause the tubers to shrivel, preventing their starting strongly into growth when re-potted in the spring; on the other hand, if they are kept too wet, decay will set in. The best method I have found is to examine them every week, and if the surface of the soil has become dust dry, it is lightly sprinkled with tepid rain-water from a fine rose watering-can.

Habenaria carnea, &c.—This beautiful flesh-coloured species is also in bloom, but from my own experience a thoroughly established plant of this species, as well as its pure white variety *nivosa*, is still rare, and its successful cultivation has yet to be discovered. The new and singular *H. Ugandæ* is also in flower at Burford; it is a very strong tall-growing species, some of the stems measuring 4 feet in height, with a spike at the apex a foot and a half long, carrying about 20 curiously formed green and white flowers. All through the growing season the plants have succeeded well under the same treatment as advised above for *H. pusilla*, and its resting conditions will probably prove to be similar to those recommended above.

Bulbophyllums.—In a shady part of the warmest house, plants of the rare *B. Ericssonii*, *B. Binnendijkii*, and *B. virescens*, each exhibiting similar characteristics in habit, are now growing freely, and it is a suitable time to afford them fresh rooting material if this is necessary. Owing to the rambling habit of these plants, it is almost useless to try and make them conform to pot treatment, and the grower must adopt some plan so that the roots from each growth will have a thin layer of peat and sphagnum-moss to root in. A flat teak-wood raft, or a shallow, boat-shaped basket, answers the purpose admirably. Whilst growth is being made, the rooting materials should be kept moderately moist at all times, as the plants appear to succeed best when the sphagnum is growing luxuriantly at their base.

In the cool house the Brazilian *Oncidium* *Forbesii*, *crispum*, and *varicosum* will be developing their flower-spikes, and only strong, well-rooted plants should be allowed to bloom. Small, weakly plants, if permitted to produce flowers, are liable to gradually dwindle away afterwards. *O. concolor* having completed its new pseudo-bulbs, should from this time be afforded only just sufficient water to prevent their shrivelling.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Calochortus.—Beds containing these plants should now be covered with a layer of cocoanut fibre or coal ashes to protect the bulbs from damage by severe frost. The more choice and expensive varieties of *Calochortus* should be grown in beds in cold frames, but most of the standard varieties may be grown out-of-doors provided they are given a partially protected site, such as a border in front of a glasshouse. Good drainage is essential for the successful

culture of these flowers, and hence it is advisable to raise the bed in which they are planted above the level to give it a slight slope. The rooting medium of the surrounding soil should contain a larger proportion of leaf-soil than is usually allowed most bulbous plants, together with plenty of grit. The present is a suitable time for planting the bulbs, which should not be placed at a greater depth than 3 or 4 inches. *Calochortus venustus* and its varieties *splendens*, *Nuttallii*, and *Gunnisonii* are common garden varieties. *C. pulchellus* and *C. amœnus* require partial shade, and may be planted in the wild garden. In many gardens *Freesias* may be grown under the conditions above named.

Zephyranthes candida is another small bulbous plant that should now be planted. This species is practically hardy, and will thrive in any ordinary garden soil. As the white *Crocus*-like flowers are comparatively small, the bulbs should be placed in groups, or they may be used with a good effect in four or five closely-planted rows as an edging in the bulb garden.

Erythronium dens-canis.—Not only are the flowers of the Dog's-tooth Violet pretty and of uncommon shape, but the leaves are beautifully mottled, and for this alone they amply repay the slight trouble their culture entails. A moderate amount of moisture is essential to their welfare. The bulbs should be planted 6 inches apart and from 6 to 8 inches deep. *Erythroniums* will thrive in a partial shaded position.

Bedding Pelargoniums.—The cuttings which hitherto have occupied pits and frames should now be moved into their winter quarters. At this stage an abundance of ventilation is necessary: they should be given fire-heat sufficient only to expel frost and superfluous moisture. For several months water should be afforded cautiously, and only when absolutely necessary. All dead and decaying leaves and flowers should be promptly removed.

PUBLIC PARKS AND GARDENS.

By W. W. PELLINGREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

Alterations.—The present is not only the best, but fortunately the most convenient, period of the year for undertaking the various alterations and repairs which it is often desirable and necessary to carry out in public parks. So few visitors are, as a rule, about just now that many of the paths and roads needing repairs or an entire overhauling may be closed without causing much inconvenience, and the work, in consequence, carried out much better than would be possible earlier in the year.

Shrubberies may also be replanted or re-arranged, and their whole aspect altered or modified in such a way as to give them the appearance of a new feature in the landscape. Clumps of trees that are requiring thinning out should now have the surplus ones—if not too large—taken up with large balls of earth around their roots, and planted in the new position selected for them. Large trees transplanted in this way can be kept securely in position by the aid of three strong wires attached to the stem and fixed in the ground at equal distances apart on a fairly large circle, the centre of which is the tree so supported. This method is better than the use of large stakes.

Herbaceous borders which have not been re-arranged for several years past could now be taken in hand. The most satisfactory method of carrying out this work is by first planning to scale on paper all proposed arrangements, and then working out the plan on the border. Parallel lines drawn at equal distances apart upon the plan and marked off at equal points in their length, and indicated upon the border by cords and pegs, enable the gardener to transfer the design to the ground in a very easy and correct manner. By following this method of working it is quite possible before a single plant is put in the border to have a very fair idea of what it will look like when completed.

Labour.—As the alterations indicated usually require a good staff of workmen to carry them out, it is fortunate that the work can be done at a season when labour can be most easily spared from the ordinary routine work of a park.

PLANTS UNDER GLASS.

By I. G. WESTON, Gardener to H. J. KING, Esq.,
Eastwood Park, Kent.

Stove and greenhouse Ferns. These plants should not be kept in too warm an atmosphere at this season, for their growths, generally, are now matured, and they require a period of rest. If much warmth is afforded them, they will probably be hastened again into growth and the plants be weakened in consequence the following season. *Adiantum cuneatum*, and similar species that are largely grown for decorative purposes, should now be afforded an atmospheric temperature at night of 45°, with a rise of 5° to 10° during the daytime. Afford a moderate amount of ventilation, but prevent cold draughts, which would quickly cause the fronds to turn a rusty brown colour. See that the centres of the plants are free from decaying fronds, and give the plants as much space as can be afforded them. Do not allow the roots to suffer from dryness, though much less water is required during their resting period. The majority of stove Ferns do not require a great heat during the winter, a minimum of 55° being ample. *Gymnogramme*, however, forms an exception to this rule, for the species succeed best in an atmosphere not lower than 60° at night, with the usual extra heat during the daytime, and if they are kept in a cold and draughty house much harm results, death often taking place under such conditions. The common varieties of *Nephrolepis*, such as *N. exaltata* and *N. tuberosa*, will withstand much rough treatment, and may be utilised for the embellishment of dwelling-rooms without suffering serious injury. The beautiful newer varieties, however, such as *N. Whitmanii*, *N. Todeaoides*, and *N. elegantissima*, are more delicate, and, after use in dwelling-rooms, need to be returned to their permanent quarters with as little delay as possible. Afford them a minimum temperature of 55°. Ferns of a hardier nature such as *Dicksonias*, and *Gleichenias*, are subject to attacks of scale and thrip if they are placed in a hot, dry atmosphere or near to the hot-water pipes. In these dry and hot portions of a plant-house, insect pests increase rapidly, and, if left undisturbed for any great length of time, will prove a source of much trouble. Ferns require no manurial stimulants during the winter.

General remarks. Frames containing plants should be freely ventilated on all favourable occasions. Remove all decaying leaves from the plants, and be careful not to over-water them. *Primulas*, *Cinerarias*, and similar winter-flowering species should be placed well up to the glass; any late-raised batches of these plants requiring potting should be attended to without delay.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq.,
Norwood, Alloa, Clackmannanshire.

Vines that were planted in the spring, having been raised from eyes in February, will now have reached the top of the rafter and should be given an abundance of air both by day and at night. They will also require some fire heat, especially if the wood has grown strongly, a little fire-heat with plenty of fresh air being well calculated to assist in the maturation of the wood. Syringe the foliage daily with clear water. This treatment will cause the wood to become of a rich brown colour, bearing well-developed buds.

Pot vines which are intended to supply the earliest crop of Grapes should be in readiness for placing in heat some time during the present month. They will require a little bottom heat to start them into growth at this dull season of the year, but be careful not to excite them with excessive heat. The atmospheric temperature should not exceed 55° until the buds swell, when it may be increased by 5°. Do not attempt to force these young vines with artificial heat exclusively. Admit a little air by the top ventilator when the weather is bright, but cold draughts must be prevented. Keep the atmosphere of the pit or house in a humid condition by damping down the paths daily, and afford very little water at the roots until the vines have well started into growth, but take care to prevent the soil in the pots becoming dust-dry. Exercise great care when working among the

vines after they have started into growth, as the buds may be very easily rubbed off.

Grapes.—Grapes which are still hanging on the rods should be examined two or three times each week for the purpose of removing any decayed berries that may be discovered, also faded leaves. Keep the vineries well ventilated during favourable weather. A cool and dry atmosphere is necessary for keeping ripe Grapes in good condition. A little fire-heat will therefore be necessary during such weather as now obtains. Remove any pot-plants from the vinery which require supplies of water.

Pruning.—Vines may be pruned a month or six weeks before they are required for starting into growth. The laterals may be pruned to two eyes, but the older the vines, the longer should the laterals be left. After the pruning has been done it will be necessary to scrub the interior of the vinery with hot water and soft soap, and to give the woodwork a coat of paint if red spider has been troublesome. Wash the rods thoroughly but carefully with the Gishurst Compound, not injuring the buds. Before tying the rods up to the trellis again, remove the surface of the border down to the roots and apply a fresh dressing of rich fibrous loam, adding a 6-inch potful of vine manure (fine grade) to each barrow load of soil. Test the border with the soil tester, and if the soil is found to be dry apply sufficient water to last throughout the winter. Apply a good mulch and the house will then be ready for starting. Protect the roots in outside borders by applying a mulch of long litter from the stable.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq.,
Cobham Park, Surrey.

Beans.—Both the dwarf and runner Beans have done very well in this neighbourhood, and, although they were a little late in coming into season, they have lasted in good condition until nearly the end of October. In many northern localities, however, they appear to have failed altogether owing to the action of frost directly picking had commenced. Dwarf Beans in unheated frames will now be almost finished, for, even if they are not crippled by frost, damping will set in owing to the atmospheric conditions. Therefore, pot plants will be the chief source of supply, and it will be necessary to make frequent sowings, remembering that at this time of the year the plants are seldom very productive. The seeds should be sown in pots seven inches in diameter, and containing good light soil, half of which may consist of manure from a spent mushroom bed. Do not apply any water until the seeds have germinated. Before water is applied to the roots of Beans growing in a heated atmosphere it should be warmed to about the same temperature as that of the atmosphere in the house, which should now range from 55° to 60°. Maintain plenty of moisture in the atmosphere, and take every means to preserve the plants in a condition of cleanliness. When the flowers have set and the Beans are swelling, afford the roots a little weak manure-water once or twice each week, but varying according to the frequency that the plants require to be watered.

Roots.—The crops of Beet, Carrots, Salsafy, Celeriac, &c., should now be lifted from the ground, have their tops wrenched or twisted off, and be stacked in layers of sand or fine ash in the store-house. This proceeding will require considerable time, and should be pushed forward with all speed during open weather. The ground will then be ready for digging or trenching, and it is very important that this work should be commenced at the earliest moment possible, thus allowing the ground a sufficient length of time to settle down before it is required for cropping and enabling the heavy soils to derive to the utmost the benefits of the cleansing and breaking down of the soil that results from the action of frost. Parsnips and Jerusalem Artichokes are just as well if left in the soil for the time being, lifting only sufficient for ensuring a continual supply in the event of hard weather, and covering the crowns of the remainder by drawing a little extra soil over them. Under these circumstances they will keep in good condition well into the new year. Before much

ground work has been carried out, the necessary arrangements for next season's cropping should be decided upon. The system of rotating the crops is one of the most important questions in vegetable culture, but, as so much depends on the nature of the soil, the size of the garden, and the different products required, no hard and fast rule can be laid down in this matter. If a liberal amount of manure is applied, and trenching is done frequently, rotation is not such an absolute necessity as where the supply of manure is scanty, and the ground merely dug over year after year, although even then it would be better to change the ground as much as possible. As most of the ground that is ready, or will soon be ready, for turning over, has recently produced root-crops, this ground should be next cropped with Peas or some sort of Brassica.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to LORD CLINTON, Bicton,
East Devon.

Small fruits.—If a few cuttings of Red and White Currants are rooted each autumn, they will provide a stock of young bushes to take the place of older ones that are worn out. The cuttings should be formed from shoots of a medium size, about 12 inches long. Make a clean, but not a slanting cut through a joint, remove the top bud on the shoot and rub off all the others except the three upper ones, as Red and White Currant bushes are best grown with clean stems, and the removal of the lower buds prevents the growth of suckers. In the case of Black Currant bushes, the basal buds should be left intact, as young basal growths are necessary for replenishing exhausted branches, for the best bunches of fruit are developed upon the young wood. Insert the cuttings, 6 inches apart, in lines 12 inches distant from each other, and make each shoot quite firm in the ground. Cuttings of Gooseberries should be prepared in the same manner as those of the Red Currant, or sucker growths will develop in abundance. Young bushes raised from cuttings rooted last autumn should now be transplanted at a distance of 2 feet apart each way.

Raspberries. The new canes should be secured to the wires, allowing a distance of 4 or 5 inches between each. Any vacancies in the rows should be made good from the reserve garden, or from stools out of line in the main rows. In making new plantations of Raspberries, the ground should be in good cultivation. Manure should be placed not deeper than 18 inches below the surface, as the Raspberry does not root to a very great depth. The rows should preferably run from north to south, and the canes be planted at a distance of 18 inches apart, allowing 5 to 6 feet between the rows. Superlative is a good standard variety. Carter's Prolific, Hornet, and Norwich Wonder are other desirable varieties, while the new variety, Penwill's Champion, has a high reputation as being a continuous bearer. Secure the canes to stretched wires, and do not cut them down until new growths appear in spring; should severe frost set in, apply a mulch to the surface to protect the roots. Good autumn-fruiting varieties are November Abundance and October Yellow.

The Strawberry.—Many cultivators of this fruit spread manure between the plants at this date, so that the manurial properties may be washed down to the roots. At present the ground is too wet to permit of manure being wheeled upon, but this may be overcome by putting down planks, or a better plan is to wait until a frost appears, when the ground will be hard and allow such work to be expeditiously carried out. Late-planted Strawberries will be benefited by some protective material such as half-decayed manure, placed around the collar of the plants, but avoid making too rich a layer for the rampant-growing variety Royal Sovereign. Remove all runners of the autumn-fruiting varieties, and reserve a few of the best-rooted plants for stock. These may either be planted direct in their permanent quarters or be set out in lines, 6 inches apart, to be again replanted next March, by which date they should be well established and be little the worse after their necessary removal if the transplanting is carefully performed.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR NOVEMBER.

SATURDAY, NOVEMBER 2—
Soc. Franç. d'Hort. de Londres meet. German Gard. Soc. meet.

TUESDAY, NOVEMBER 5—
West of Eng. Chrys. Soc. Sh. at Plymouth (2 days). Nat. Amateur Gard. Assoc. meet. Brighton Chrys. Sh. (2 days). Ann. meet Croydon Hort. Soc. Scottish Hort. Assoc. meet. Southend-on-Sea Chrys. Sh. (2 days). Southampton Chrys. Sh. (2 days).

WEDNESDAY, NOVEMBER 6—
Nat. Chrys. Soc. Exh. at Crystal Palace (3 days). Cardiff Chrys. Sh. (2 days). Colchester Rose and Hort. Soc. Sh. Brixton, Streatham, and Clapham Hort. Soc. Autumn Sh. (provisional). Cambridgeshire Hort. Soc. Autumn Sh. (2 days). Stoke Newington and Dist. Chrys. Sh. (2 days). Bromley Chrys. Sh. (2 days).

THURSDAY, NOVEMBER 7—
Torquay Chrys. Sh. Putney, Wandsworth, and Dist. Chrys. Sh. (2 days). Addlestone, Chertsey, and Otter-shaw Autumn Sh. Newport (Mon.) Chrys. Sh. Spalding Chrys. Sh.

FRIDAY, NOVEMBER 8—
Leicester Chrys. Sh. (2 days). Windsor, Eton, and Dist. Chrys. Sh.

MONDAY, NOVEMBER 11—
United Ben. and Prov. Soc. Com. meet.

TUESDAY, NOVEMBER 12—
Roy. Hort. Soc. Coms. meet. Exeter Fruit and Chrys. Exh. (2 days). Ulster Hort. Soc. Sh. at Belfast (2 days). Altrincham, Bowdon, Hale and Dist. Chrys. Sh., Hale (2 days). Devises Chrys. Sh. Birmingham and Midland Counties Chrys. and Fruit Sh. (3 days).

WEDNESDAY, NOVEMBER 13—
Liverpool Hort. Assoc. Sh. (2 days). York Chrys. Sh. (3 days). South Shields and Northern Counties Chrys. Sh. (2 days). Bath Gardeners' Soc. Chrys. Sh. (2 days). Reading Chrys. Sh. Tonbridge Chrys. and Fruit Sh. (2 days). Brixton Chrys. Sh. Chester Paxton Chrys. and Fruit Sh. (2 days). Manchester Bot. Gardens Chrys. Sh. (3 days). Lancaster Chrys. Sh.

THURSDAY, NOVEMBER 14—
Edinburgh Chrys. Sh. (3 days). Barnsley Chrys. Sh. (2 days) (provisional). Weston-super-Mare Chrys. Sh.

FRIDAY, NOVEMBER 15—
Sheffield Chrys. Sh. (2 days). Bradford Chrys. Sh. (2 days). Bolton Chrys. Sh. (2 days). Derby Chrys. Sh. (2 days). Stockport and Dist. Chrys. Sh. (2 days).

SATURDAY, NOVEMBER 16—
Burton-on-Trent Chrys. Sh. German Gard. Soc. meet.

MONDAY, NOVEMBER 18—
Nat. Chrys. Soc. Floral Com. meet.

TUESDAY, NOVEMBER 19—
Leeds Paxton Soc. Chrys. Sh. (2 days).

WEDNESDAY, NOVEMBER 20—
Darlington Chrys. Sh.

FRIDAY, NOVEMBER 22—
Roy. Bot. Soc. meet. Aberdeen Chrys. Sh. (2 days).

SATURDAY, NOVEMBER 23—
Morley and Dist. Paxton Soc. Chrys. Sh.

TUESDAY, NOVEMBER 26—
Royal Hort. Soc. Coms. meet. Brit. Gard. Assoc. Ex. Council meet.

THURSDAY, NOVEMBER 28—
Exhibition of Colonial Produce at Hort. Hall, Westminster (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—44.9°.

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, October 30 (6 P.M.): Max. 56°; Min. 51°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, October 31 (10 A.M.): Bar. 29.7; Temp., 53°; Weather—Bright sunshine.

PROVINCES.—Wednesday, October 30 (6 P.M.): Max. 51°, England S.E.; Min. 48°, Ireland N.W.

SALES FOR THE ENSUING WEEK.

MONDAY—
Clearance Sale of Nursery Stock, at The Nursery, Red Lake, Winchelsea Road, Ore, Hastings, by Protheroe & Morris, at 12.30.

MONDAY AND WEDNESDAY—
Sale of Dutch Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY TO FRIDAY—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

TUESDAY & WEDNESDAY—
Second Annual Sale of Nursery Stock, at Wooldale Nurseries, Thongsbridge, near Huddersfield, by order of Messrs. Broadhead & Son, by Protheroe & Morris, at 11.30.

WEDNESDAY—
2,250 Roses, at 1.80. Palms, Azaleas, Bays, &c., at 5, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

FRIDAY—
500 Imported Odontoglossum crispum, Importations of Cœlogynes and Cypripediums, and other Orchids, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

The season is approaching when the greater part of the kitchen garden will be bare of crops, and one of the chief items of the daily work will consist in preparing the soil for use in the following season by trenching or digging. On the present occasion our remarks refer exclusively to trenching.

There are two ways in which this may be done, the top soil may be left on top or a considerable portion of it may be buried and some of the subsoil brought up to the surface. The former process is often spoken of as double digging or bastard-trenching, and the latter simply as trenching; the two methods differ considerably in their effects and one may be very successful where the other would be of no use or might even be injurious. A knowledge of the effects produced on the physical and chemical properties of the soil and on the bacteria and other organisms present is necessary before one can decide which method to adopt.

Of all the properties of soil, its power of holding water is fast becoming the most important to the gardener, and for very obvious reasons. In choosing a site for a modern house it is considered essential that the soil should be dry and porous, so as to allow free drainage, that the elevation should be sufficiently high, and that the surrounding country should be as wild and open as possible. These conditions are all closely connected; they can be found on high-lying chalk or sand formations, and if we examine the country for twenty miles round London we shall find that such formations are usually taken up by large houses, while the heavier soils and clay, particularly if low lying, are occupied by small villas or cottages. The relative value of high, dry situations and of low, moist ones have become reversed since the old farming days, for when other land was being enclosed and taken into cultivation, the light high-lying soils were often left alone, owing to their dryness. Indeed, it is not too much to say that the existence of wild, open country in counties like Kent and Surrey, which have always been highly farmed, is due to an unsuitable water supply. It is this kind of soil, rejected by the farmer even when cultivation was most profitable, which has now to be taken in hand by the gardener.

The amount of water needed for plant growth has been variously estimated, but we shall probably not be far wrong in supposing that the plants growing on each rod of ground require, during the summer months, about six tons of water, equivalent to 10 inches of rain. The average rainfall at Rothamsted during the months of May, June, July, and August is 10 inches, but so much of this would run through a light sand or chalk soil that but little is left for the plants; these are, therefore, dependent for their water supply on rain which has fallen during the preceding months. February, March, and April usually constitute the driest period of the year; the chief water supply comes from the autumn and winter rains. One of the problems the gardener has to solve is to keep this in the soil until the summer.

Several factors influence the amount of water retained by the soil, but two of the most important are the arrangement of the particles and the amount of organic matter

present. Just as a sponge holds less water when squeezed than when in its ordinary loose state, so a compact soil holds less water than a looser one. Ground that has been dug one spit deep is better able to soak up and keep rain water than untouched ground, and the difference is increased when the land is trenched. The writer found in May that the trenched ground in his garden contained 19 per cent. of water, while the adjoining undug part only contained 16 per cent., a difference of 3 per cent., equal to 4cwt. per rod, in favour of trenching. This was on a good loam; a light sand might not have shown so great a difference.

The influence of organic matter is equally great, and one of the reasons why well rotted dung, leafmould, and similar substances are so highly valued as manure is that they enable the soil to hold up water which would otherwise run away and be lost. In the case of a light soil, the amount of organic matter present is probably the chief factor regulating the amount of water it can hold. At short time ago the writer had occasion to examine a very light, sandy soil from a high-lying Surrey garden, which always suffers from drought in the summer. It was found that the top spit, which had been well dunged and contained a fair amount of organic matter, was able to hold 53 per cent. of water, while the lower spit, which, of course, contained much less organic matter, could hold only 28 per cent., even under the most favourable circumstances such as would rarely occur in practice. Part of the ground had been trenched, and dung worked in to the bottom spit; here the subsoil had a greatly increased power of holding water, and plants did much better. The subsoil had been made to more nearly resemble the surface soil.

The briefest way to summarise all the effects of trenching would be to say that it makes the lower soil in every respect more like the top soil. The difference in composition between the two is often very marked on untrenched ground; the surface soil contains more nitrogen, potash, and phosphoric acid in forms suitable for the plant, more organic matter to hold water, and less sticky, unkindly, often harmful, clayey matter than does the soil lying below. The difference is partly due to the fact that many of the manures used remain near to the surface, and partly to the fact that air circulates more freely in the top six or seven inches than in the more compact soil lower down. Where the air moves, earthworms can easily get about and exert the beneficial action known to all observant gardeners, and fully set forth in a book all gardeners should read: Charles Darwin's *Formation of Vegetable Mould*. Air is also needed for the myriads of living things, too small to be seen except by aid of a very powerful microscope, that inhabit the soil and contribute largely to its fertility. In its absence they can do nothing, but are, instead, replaced by organisms that do not improve the soil for plants, but tend to destroy, rather than make, plant-food. Air also destroys many substances harmful to plants. All these actions go on in the surface soil to an enormously greater extent than in the subsoil, and this partly accounts for the marked difference in productiveness. The writer recently grew one lot of mustard in pots filled with surface soil, and another lot in pots filled



Photograph by E. T. Lamb.

A FINE SPECIMEN OF *CATTEYA WARCEWICZII*, FROM MAJOR HOLFORD'S COLLECTION,
WESTONBIRT, GLOUCESTERSHIRE.

with subsoil, and obtained nine times more crop in the former than in the latter case. As soon, however, as the ground is trenched, air can get into the bottom spit; before long, earthworms and useful bacteria will follow, and bring about there the same beneficial changes they have exerted in the surface soil, thus reducing the difference between the two.

It must be carefully remembered that trenching does not improve the top spit. Many experiments on this subject have been tried, but practically all with the same result. It has sometimes been thought that the subsoil is a kind of virgin soil, rich in plant food and very beneficial if brought up to the surface. This, however, is not usually the case. A very famous experiment was made many years ago by the Rev. S. Smith, vicar of Lois Weedon. Finding that it no longer paid to use much dung for wheat, he hit on the idea of using the subsoil for manure, and, therefore, trenched his ground so as to bring much of the subsoil to the top. Though the plan succeeded at Lois Weedon, Lawes and Gilbert found that it failed at Rothamsted, and that it certainly added no plant food to the surface soil.

The improvement is in the bottom, not in the top spit, and this is the important fact to bear in mind in deciding whether to trench or to bastard-trench. Trenching is often found better than bastard-trenching on light, sandy soils, where the lower depth is almost pure sand. No harm need be feared from bringing up this bottom spit, because it is quite harmless to the plant; it can be enriched with manure, and will then make a useful medium for the roots of plants. On the contrary, much good may result from burying the top spit. It has a better power of holding water, and will keep the soil moister than before. It is also richer, and when the plant roots get down into it, they grow well and produce what all who cultivate sandy gardens should aim at—a luxuriant root-development several inches below the surface, out of reach of scorching or drought. If, however, the bottom spit contains a sticky, unkindly clay, it must not be brought up but carefully kept below; recourse must be had to bastard-trenching and not to real trenching. An excellent illustration is afforded by the red, flinty clay capping the chalk round London. Gardens on this formation have been trenched, the top soil being buried and the bottom spit brought up. The results are very disastrous. The lower soil is quite unsuited for plant growth; young plants grow badly from the beginning, and either die or survive as poor, stunted specimens. But where the bottom spit is carefully kept below and enriched with manure, excellent results are obtained. Of course, the top soil must be manured and cultivated just as usual, or in course of time the root system is apt to develop too much in the subsoil and too little on the surface.

To sum up, the results of trenching are (1) to increase the amount of water the soil can hold in reserve for the summer, (2) to allow more air to enter and exert its beneficial effects on the subsoil, (3) to cause the beneficial action of earthworms, air-loving bacteria, and other organisms to go on more readily in the subsoil, (4) to increase the root

range of the plant and so bring about a larger root development and a greater amount of growth. In deciding whether to trench or bastard-trench, the chief point to bear in mind is that the top spit is not benefited and may be injured by the process. If sticky, unkindly clay is brought up, it is better to bastard-trench, but if the subsoil is harmless sand proper trenching may give better results.

OUR SUPPLEMENTARY ILLUSTRATION represents the fine specimen of *Cattleya Warscewiczii*, which was included in the remarkable group of Orchids for which Major G. L. HOLFORD, C.V.O., C.I.E. (gr. Mr. H. G. Alexander), was awarded the Gold Medal of the Royal Horticultural Society on July 23 this year. The specimen, which was grown from an ordinary example imported from Medellin, bore 26 flowers and buds, and was probably the grandest example of the species ever seen during the many years it has been in cultivation. The flowers were silver-white tinged with rose, the labellum being ruby-crimson with yellow lines from the base, and with an attractively crimped pale lilac margin.

LINNEAN SOCIETY.—An ordinary meeting of the Fellows will be held on Thursday, November 7, at 8 p.m., when the following papers will be read:—1, the Rev. GEORGE HENSLOW, M.A., F.L.S., "The Origin of the Di-trimerous Whorls among Flowers of Dicotyledons"; 2, Mr. ALBERT D. MICHAEL, F.L.S., "Unrecorded Acari from New Zealand"; 3, Mr. R. SHELFORD, M.A., F.L.S., on *Ænigmatistes africanus*, a new genus and species of Diptera. Exhibitions: 1, Mr. ALEXANDER STEVENSON, a copy of Hudson's *Flora Anglica*, 1778, with numerous annotations by the Rev. WILLIAM KIRBY, F.L.S.; 2, Dr. A. B. RENDLE, M.A., F.L.S., abnormal stem of *Eucalyptus salmonophloia*, F. Muell., from West Australia.

THE NATIONAL DAHLIA SOCIETY.—Mr H. H. THOMAS has accepted the honorary secretaryship of this society.

NATIONAL FRUIT GROWERS' FEDERATION.—A meeting of the council will be held on Monday, November 4, at 3 p.m., at the Royal Horticultural Hall, Vincent Square, S.W. The recommendations of the sub-committee on the election of a secretary and alterations of the rules will be considered, and a date will be fixed for a special general meeting.

SOUTH-EASTERN AGRICULTURAL COLLEGE.—We are informed that a meeting of the governors (Lord ASHCOMBE presiding) was held at the Caxton House on Monday. The Principal (Mr. M. J. R. DUNSTAN) reported the entry of 42 new students for the session 1907-8, a total number of 120 students in residence, and a waiting list of students unable to join on account of all available accommodation being filled up. The following appointments were made:—Head of the chemical department, W. GOODWIN, P.Sc., Ph.D.; head of agricultural department, B. N. WALE, B.Sc.; assistant agricultural lecturers, R. N. DOWLING, P.A.S.I., J. MACINTOSH, N.D.A.; head of estate management department, A. H. J. HAINES, P.A.S.I.; assistant lecturer in engineering, A. F. HOOD-DANIEL, P.A.S.I. A new department of soil bacteriology is being established under the charge of Mr. C. T. GIMINGHAM. The conference of hop-growers will be held on November 27, under the chairmanship of Mr. E. C. LISTER-KAY, of Godmersham Park, when papers on Fertilisation of Hops, Eelworms, and Hop drying will be communicated.

MR. JOHN WRIGHT, V.M.H. Many of our readers will sympathise with Mr. JOHN WRIGHT in the bereavement he has sustained in the death of his wife, which occurred on Tuesday last at Rosehill Road, Wandsworth. Mr. WRIGHT, who will be remembered best as a former editor of the *Journal of Horticulture*, is still a lecturer on gardening for the Surrey County Council.

THE HALF-HOLIDAY.—We announced in a recent issue that Messrs. J. E. HILL & SON, of Lower Edmonton, had given their employes the privilege of leaving work at 1 p.m. instead of 5 on Saturdays. A correspondent now writes us to the effect that 21 other firms have granted their employes the same boon: seven at Enfield Wash, ten at Flamstead End, Cheshunt, and four at Lower Edmonton. This valuable concession promises to become general.

DESTRUCTIVE INSECTS AND PESTS ACT, 1907.—At a meeting of the council of the National Federation of Fruit and Potato Trades Associations held on the 29th ult., the following resolution was adopted:—"That this Council views with serious apprehension the position of growers and market-gardeners under the Destructive Insects and Pests Act, 1907, whereby the Board of Agriculture and Fisheries is authorised to order the destruction of agricultural or horticultural crops, trees, or bushes without the power to give or direct compensation of any kind, and while otherwise welcoming the powers thus vested in the Board to prevent the spread of disease dangerous to vegetable life, this Council protests against the inequitable position thus created, and desires to urge that the right to compensation (payable partly out of Parliamentary funds and partly out of local funds) should be recognised without delay in the interests not only of horticulturists but also of those who might otherwise contemplate availing themselves of the provisions of the Small Holdings and Allotments Act, 1907." Further resolved: "That a copy of the above resolution be forwarded forthwith to the President of the Board of Agriculture and to the Prime Minister."

COLD STORAGE OF SMALL FRUITS.—The U.S. Department of Agriculture has just issued an excellent and instructive bulletin (Bureau of Plant Industry, Bull. 108) dealing with the question of the cold storage of small fruits. In the States, as in Canada, cold storage is largely used in connection with the larger fruits, but it is less practised in the case of the small ones, since most of them will not remain in marketable condition for very long when kept in the cold chamber. But the results so far obtained show that further experiments are worth making, for by holding up the fruit, even if only for a week or two, during a glut, a considerable advance in price may often be obtained. Experiments made in England some eight or nine years ago under the auspices of the Kent County Council yielded encouraging results, Cherries remaining sound for a month, and Red Currants for as long as six weeks. The whole problem of fruit storage can hardly have been said to have received the attention which, from its economic importance, it assuredly deserves. The changes that go on during the process of ripening are by no means understood as yet, and indeed our knowledge on the subject hardly goes beyond the elementary fact that the changes in question can be slowed down, or otherwise interfered with, by lowering the temperature. The matter is one that calls for co-operation on the part of the plant physiologist and the chemist, for as we come to understand the nature of the processes involved we at least stand a chance of getting them under intelligent control.

THE RECENT FRUIT SHOW.—In the report of this show, published as a supplement last week, we omitted to record the excellent display of fruits staged by the KING'S ACRE NURSERY COMPANY, in the class for a collection of hardy fruits, occupying an area measuring 16 feet by 6 feet. This exhibit was awarded the 1st prize, being a Silver-Gilt Banksian Medal. Visitors to the show will doubtless remember the beautiful colour and the general high quality of the Apples and other fruits contained in this Herefordshire exhibit.

"THE GARDENER."—Mr. W. P. WRIGHT who has edited this weekly journal since its establishment, is about to retire, and Mr. H. H. THOMAS has been appointed to succeed him. Mr. THOMAS, who is a son of Mr. OWEN THOMAS, V.M.H., has had good experience in the Royal Gardens, Windsor; Royal Gardens, Kew;

Towards the close of the evening, Mr. JACKSON, on behalf of the park keepers and other employees, presented Mr. MARLOW with a gold Albert as a token of esteem. Mr. MARLOW, in acknowledging the gift, said any results that had been in beautifying Greenwich Park during his term of office had not been attained by his own personal endeavours alone, but through the loyalty and enthusiasm of his colleagues, and no superintendent could have had a more willing staff.

A DICTIONARY OF BOTANICAL TERMS.—Mr. A. M. C. JONGKINDT CONINCK has published a second edition of his dictionary of the principal terms employed in botany and horticulture. The exact title of the book is *Dictionnaire Latin-Grec-Français-Anglais-Allemand-Hollandais des principaux termes employés en Botanique et en Horticulture*. It is an alphabetical index of Latin and Greek terms, with the synonyms of

the Surrey Education Committee to all whose front gardens were awarded 35 marks. The borough is, for the purposes of the competition, divided into halves, the classes in each part being for large gardens, small gardens, and for window boxes. In all, 32 prizes were awarded. Competitors are restricted to those occupying houses rated at £20 and under, thus in all cases limiting competition to manual workers. The judging took place on August 13 last, the awards being made by the county horticultural instructors, Messrs. J. WRIGHT, V.M.H., A. DEAN, V.M.H., and the borough gardener, Mr. J. HALLETT. Many of the gardens, though relatively small, being practically street forecourts, were wonderfully furnished, every little space or contrivance possible being utilised to furnish plants and to add to the beauty of the gardens. In some cases where the front garden was very narrow, the



FIG. 126.—VIEW IN THE "FOND DE MARY" GARDEN, BELGIUM.

Messrs. JAS. VEITCH & SONS, Chelsea; M. ROTHSCHILD's garden, near Paris, &c. For the past seven years he has assisted Mr. E. T. COOK in editing *The Garden*. He is the author of two books, *The Apple* and *Town Gardening*, the latter work having been published very recently. We wish the new editor every success.

PRESENTATION TO MR. W. J. MARLOW.—On Friday evening Mr. and Mrs. HENDRY, the caterers at the refreshment pavilion in Greenwich Park, entertained the park keepers and other employees with their wives to tea. The occasion gave opportunity to bid farewell to Mr. W. J. MARLOW, the superintendent of the park, who, as announced in the *Gardeners' Chronicle* a few weeks since, has been appointed to the management of Hampton Court Gardens.

each, in four modern languages, and is extremely useful for reference when the exact equivalent of some foreign word is needed. Several errors that appeared in the first edition have been corrected, and we may recommend the work as being especially suitable for nurserymen and others having commercial relations with foreign countries. It is published by the author at Bussum, Holland, price 4 francs.

FRONT FLOWER GARDENS.—The annual distribution of prizes to competitors in connection with the usual front flower gardens competition for the Borough of Kingston-on-Thames took place on Saturday evening last in the hall of the Public Library. In addition to these, there were also presented certificates to new competitors and merit cards to old ones, granted by

front of the house was covered with climbers, window boxes, plants on brackets or in baskets. One front garden, securing 56 marks, came higher than any larger cottage flower garden in the county. The prizes are chiefly furnished by contributions from the Mayor and Corporation. "To beautify our town" was the motto of the originator of the competition, and that idea has been firmly adhered to. The annual cost is about £20. The secretary is Councillor T. LYNE, J.P., of Kingston. The present year's competition is the eighth of the series.

Publications Received.—*The Garden that I Love* (second series), by Alfred Austin.—*Amateur Sport Illustrated*, a new weekly journal devoted to sport and published at the price of threepence.

A BELGIAN GARDEN.

THE illustrations at fig. 126 and fig. 127 represent views of the pond in what is known as the "Fond de Mary" garden, Esneux, Belgium, a park belonging to the Rond-Chêne estate, which is kindly placed at the disposal of the public. M. Louis Gentil, Curator of the State Botanical Garden, Brussels, and Editor of *La Tribune Horticole*, to whom we are indebted for the photographs, states that this magnificent park or garden is known all over Belgium, and is visited by most of the inhabitants of the Ourthe Valley at Esneux. In this park portions may be seen where nature appears just as it was before the interference of civilisation. The park itself is really "wild" in effect, with charming cultivated features, including a splendid screen of Scotch Firs, plenty of verdure, thick shades, stream, &c. The estate of the Rond-Chêne was

publication or advertising seems to influence the London papers, as the show was either ignored or treated by them as of very small importance, or, as in one case, with such stupidity as to show that Pressmen generally are ignorant on fruit matters. Probably the Council relies on its huge fellowship to fill the hall at an October fruit show. That most of the Fellows fail to visit the show at all is because most of them are Fellows for purely social purposes. When some years ago a great show of hardy fruit was held in the City Guild-hall, tens of thousands of persons flocked to see it, and were delighted. Certainly there was no charge for admission, and tens of thousands of persons would hardly be welcomed at Vincent Square. That popularity was largely due to wide advertising, and the notices were favourable and liberal in the daily and evening papers. It is not merely that the public should be captured at a fruit show to make a good gate. That is, of course, desirable, but the public are

from one of the best-known nursery firms, has shown produce from this same vine many times since without any question of correct name being raised, and even in the classes for Muscat of Alexandria in the same hall in previous years. A well-known nurseryman who saw the produce some years ago was so impressed with the appearance of the Grapes borne by this vine that he was, and has been anxious ever since, to secure all the eyes for his stock, which he has grown and distributed widely and without the slightest doubt ever having been cast upon the identity of the variety. What must be his feelings now on witnessing the scene in the R.H.S. Hall or in reading the report in the *Gardeners' Chronicle*? Is it not just possible that the judges were misled in their belief that the Grape was not the Alexandria variety owing to the bunches having been cut five weeks ago and kept in water? Would not they lose a little of the true Muscat flavour in consequence, especially as



FIG. 127.—WATER SCENE IN THE "FOND DE MARY" GARDEN, BELGIUM.

formerly the property of M. le Senateur Montefiore-Levy, a renowned amateur, and during the life of Mrs. Montefiore it was considered as the most beautiful garden of Belgium. It belongs now to Mr. Balser, a rich banker.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

THE PUBLIC AND THE R.H.S. FRUIT SHOW.

—You comment, in your leader in last week's issue on the fruit show at Vincent Square, on the lacking interest shown in the exhibition by the general public. But what did the public know of the show? Thousands of persons interested in British or home-grown fruit would, I am sure, gladly have visited the show, but they knew not of its existence. The lack of

also wanted to learn the true nature of British-grown fruit, what it is, and how it can be produced, and to see what is its real superiority over all other fruit of similar nature from elsewhere. As it is, the public see in the markets imported fruit which is beautiful in appearance, and generally British fruit which is inferior. Did they attend a hardy fruit show, they would then learn to understand what good home-grown fruit really is. *Pomona*.

JUDGING MUSCATS.—It is a long time since so much excitement was manifest in the awards given to two collections of fruit as that which occurred at the recent fruit show, or since such various opinions were expressed as to the identity of two bunches of Grapes. I sympathise with Mr. J. Lock, the exhibitor of the Grapes in dispute, who staged them in all good faith as being true to name Muscat of Alexandria. Originally—10 years since—he obtained the vine with others

they were not good examples of that variety? I tasted the berries, and at once decided they were of the Alexandrian variety. Was it wise on the part of the judges to denounce the name given in all good faith by the exhibitor in such a moot case? I have had experience with so-called forms of Muscat, such as Charlesworth Tokay and Escholata, as well as the more commonly-known Bowood form, and have come to the conclusion that they are seedlings from the original. According to the late Dr. Hogg, the name Escholata was given by Daniel Money, a nurseryman and vine-grower at Haverstock Hill, from having named his place "Eschol Place," in allusion to the brook Eschol, where Israelite spies got the large bunch of Grapes on their return from Canaan. Although the berries on the disputed bunches were more bluntly rounded than usual, the small, dark speck which many of them carried at the point

was unmistakably characteristic of the Alexandrian variety. If the judges decided the name was incorrect, the public would be interested to know what name they give it? *Grape Grower.*

Respecting the awards of the judges in Class I, Division I., for nine dishes of ripe dessert fruits at the recent fruit exhibition of the Royal Horticultural Society, may I be allowed to state the following facts:—In my exhibit I included Muscat of Alexandria Grapes cut from the same rods and in the same house from which I have gathered Grapes that have been awarded 1st prizes at different exhibitions for the last 10 years. To my astonishment, these Grapes were pronounced by the judges "not Muscats," although two of the three judges have awarded me prizes for the same-named Grapes on a previous occasion. Rule 5 of the R.H.S. says the decision of the judges shall be final, and, according to the pointing of the judges on my exhibit card in blue pencil, I was awarded 52 points, as against Mr. Goodacre's 51 points on his card, and the 1st prize label was originally stuck on my card. Who caused the judges to reverse their decision? On my label, "Muscat of Alexandria" was struck through, and "Charlesworth Tokay" substituted. The latest published edition of the R.H.S. Rules for Judging, p. 16, note 62, says: "For exhibition purposes Bowood Muscat, Charlesworth Tokay, and Tynningham Muscat are to be regarded as synonymous with Muscat of Alexandria, and cannot be shown as distinct varieties." I have been awarded 1st prizes for these Grapes as "Muscats" during the last 10 years at the following exhibitions, viz.: Devon and Exeter Horticultural Society, Woking Horticultural Society, Guildford Chrysanthemum, Weybridge Horticultural Society, Kingston Horticultural Society, National Chrysanthemum Society; and at the last great R.H.S. fruit show, held at the Chiswick Gardens, when I was placed 2nd in the Muscat class. Well do I remember Mr. Iggulden saying I ought to have put my Muscats which I had exhibited in the collection in the Muscat Class instead, for he said they were the finest Muscats in the show. At the Taunton Deane Horticultural Society's exhibition of 1901 I was 1st with Muscats, and also won the Veitch Memorial Medal and £10 for eight dishes of fruit, which included Muscat Grapes cut from the same rods as those shown at the R.H.S. a fortnight ago. *Jas. Lock, The Gardens, Otlands Lodge, Weybridge.*

As the incident alluded to in your leading article on p. 297 has provoked considerable discussion among Grape-growers, perhaps the following information on a similar subject may be welcome. Some years ago our firm supplied the vines for planting a new range in the neighbourhood. The gardener, a well-known grower, gave them a rather rich diet, the result being magnificent growth, and the third year he took all the first prizes at a local show. An attempt was made to disqualify his Muscats as not being true to name. A portion of a bunch was sent to the leading expert of the day, who pronounced it to be "Trebiano" or "White Tokay," I forget which. The gardener informed us of the trouble, and I went over to see the vines. The Grapes had not a trace of Muscat flavour, but the wood and foliage were unmistakably those of a Muscat. I stated my opinion that they were true to name but had grown out of character owing to over-feeding, and that another year or two of cropping would bring back the flavour. This prediction was fully verified, and these vines a year or two later bore Grapes of thoroughly characteristic flavour. Whether Muscats without flavour should be allowed full points is another question, but that they may be grown (or overgrown) to this condition is undeniable. *Chas. E. Pearson, Nurseries, Loddham.*

MUSCAT VARIATIONS AND SYNGNYS.—The doubts expressed at the recent Royal Horticultural Society's Fruit Show concerning the white Grapes exhibited in the handsome collection of dessert fruits from Mr. J. Lock, Otlands Park Gardens, Weybridge, have introduced a subject of great interest, namely, the variations of

Grapes under cultivation. Some years ago I had occasion to call the attention of Dr. Robert Hogg to some strange differences in the forms of berries of Black Hamburg and Muscat of Alexandria. He confirmed my observations by several instances within his own experience, and finally referred me to the following passage in the last edition of the *Fruit Manual*, which occurs under a description of Black Hamburg: "I have watched this subject with some care, and I have remarked that the same vine will in one year produce berries which are perfectly round and in another they will be distinctly oval. This is also frequently discerned in Muscat of Alexandria. In one year the berries are roundish oval and in another they are long oval, and frequently with a contraction at the stalk end, giving it a Pear shape." Mistakes have arisen before now in hastily condemning exhibits as not true to name, and in the same way seedlings from certain Grapes have been thought to be distinct from limited experience, and have been sent out under new names that have ultimately served only to swell the list of synonyms. Thus the Charlesworth Tokay (printed Charlesworth on p. 297), the Bowood Muscat, and the Tottenham Park Muscat have all been regarded at different times as distinct from Muscat of Alexandria, yet careful comparative trials have determined their indisputable identity. For a long time the last of the three named above was considered to be an improvement, but George Lindley said of it, 76 years ago (*Guide to the Orchard, &c.*), "the identity has been proved over and over again by the best practical gardeners, who have grown them both (i.e., Muscat of Alexandria and the seedling). The size of its berries has been urged as constituting its difference, but berries of the old Muscat have been grown near London which measured 4 inches in circumference the long way, and 3½ inches the short one." The old Red Muscat of Alexandria, which we now know as Muscat Hamburg, has afforded similar examples believed to be distinct, in Greave's Muscat Hamburg and Venn's Seedling Black Muscat. Chasselas Musqué also reproduces itself fairly constant to character from seed, and both Gosling's St. Albans and Graham's Muscat Muscadine were undoubtedly seedlings genuinely believed to be distinct by the raisers. But besides variation in the shape of the berries, the flavour also varies—and this was the point which as I understand, influenced the judges adversely to Mr. Lock's Grapes—according to the influence of many conditions. Mr. A. F. Barron once gave me a striking example of this in the old conservatory at Chiswick, where a vine of Muscat Hamburg was grafted on some unknown Spanish Grape of little value. Though the bunches and berries were in good character, the typical flavour was almost lost, and would never have been recognised as a Muscat. During the past week I had a similar example of the true Muscat of Alexandria which had been worked on the stem of another unsatisfactory vine, and the berries were almost flavourless, though the appearance was excellent. The suggestion made at the show in question that Mr. Lock's Grape resembled "Waltham Cross" was much more to the point than any other I heard; this is now little known, but it has been described as an exaggerated Muscat of Alexandria as regards size, rather paler in colour, and much deficient in flavour. It is a fine variety for exhibition where judges are not allowed to taste the fruit, but not of much real value at home. *R. Lewis Castle.*

Remarking on the class for "One dish of any other dessert Plum," your reporter stated that the variety which gained the first prize was Reine Claude de Bavay, and goes on to remark, "the variety Rivers' Late Orange, though gaining no award, was particularly noticeable in this class by reason of the large size and rich colour of the fruits." In reality it was the Rivers' Late Orange which gained the first prize, but the prize card had been placed as reported, on the wrong dish by visitors. I was sorry not to see this estimable variety, Late Orange, included in the list of "Late Ripening Plums," given by Mr. W. H. Clarke in his article on this subject in the issue for October 19. This variety is sure to become a favourite when better known, being a good cropping Plum and one of the most pleasing in appearance. Intending planters should not overlook two other valuable late Plums sent out by the same firm,

viz., Monarch and Grand Duke, both of which are at the time of writing still holding very nice fruits on a west wall. *F. W. Church, Poles Park Gardens, Ware, October 28.*

CHRYSANTHEMUM SHOWS: BOARDS V. VASES.

—Mr. Godfrey misunderstood my remarks as to extraneous attractions at Chrysanthemum shows. I cannot see that I gave the impression that I objected to such things as music, but merely stated that we must not consider the attendances at large provincial shows to be entirely owing to the Chrysanthemums. I feel grateful to the fact that with the aid of good bands, &c., we are able to hold so many shows, that could not succeed without such aid. *Norman Davis.*

I quite agree with Mr. Godfrey's remarks (p. 282) on the heavy expense incurred in the packing and transit of Chrysanthemums for the vase classes. If a gardener enters in two or more classes nowadays at a Chrysanthemum exhibition, his employer might imagine his servant was taking the whole contents of the plant houses with him, should he see the boxes. Since exhibiting at flower shows, I was never called upon to pay excess fare for my boxes until the vase classes came to the front; but last season I was called upon to pay heavily at Sheffield in this respect. In my opinion the vase classes are responsible for keeping exhibitors away from our exhibitions. A committee man at one of the best shows in the Midlands, to whom I complained of having to furnish five blooms in a vase, which meant forty blooms, for one class, stated that the committee had the public to cater for. If this is so, I do not know how the exhibitors will fare. *C. Crooks.*

I have read with much interest Mr. N. Davis's and Mr. Godfrey's letters on this subject, and I agree with them that in dispensing with boards for showing the blooms the varieties are greatly limited in an exhibit, and that many fine varieties are thus not displayed. All large societies should have some board as well as vase classes. Many new varieties of Chrysanthemums require to be grown a year or more before sufficient good blooms can be obtained for filling a vase, whereas if the schedule required 24 or 36 distinct blooms on boards, any novelty could be included even if only one good bloom developed, and thus the exhibit would be made more interesting to Chrysanthemum specialists, who are ever on the look-out for new varieties. Another point in favour of this system of staging is that an increased number of varieties exhibited has a greater attraction for the visitor. Many growers can and do exhibit 24 or 36 distinct blooms, but they probably would never attempt the staging of a dozen vases containing as many varieties, because sufficient flowers of each variety to include three of each would be difficult to obtain. Mr. Godfrey's remarks on judging Chrysanthemums are very appropriate. *Thomas Lunt, Keir Gardens, Dunblane.*

THE DISCUSSION ON SUMMER PRUNING.

You have stated the whole case, practically and scientifically, in the following paragraph from the leading article in last week's issue:—"There is a generally-expressed opinion amongst those who speak with practical knowledge, that there exists a balance between the different organs of the tree which, when properly struck, leads to fruitfulness. The balance may be reached naturally, and without external interference, or it may require artificial adjustment. And here we seem to find outlined the difficulties which are unavoidably felt as soon as an attempt is made to reconcile the conflicting statements of the experts." Until ordinarily favourable conditions, as regards climate, the fruitful balance is easily struck if the roots are prevented from going too deep and kept so near the surface by an impervious bottom that they will ripen like the wood. I don't see that this idea came out in the discussion. Under these conditions a tree will always be sufficiently vigorous and fruitful without pruning in any form. Thinning and feeding will secure size and quality, which have nothing to do with the pruning question. Mr. Spencer Pickering's paper was full of interest, and Mr. A. H. Pearson made it clear, for the first time, that pinching and summer pruning were different things, while Mr. Spencer Pickering showed that both curtailed the bearing capacity of the tree. *J. Simpson, Studfield.*

SOCIETIES.

ROYAL HORTICULTURAL.

OCTOBER 29.—The ordinary fortnightly meeting of the Committees of this society took place on Tuesday last in the Vincent Square Hall, Westminster. The most remarkable exhibit was a group of Orchids from Major HOLFORD'S collection at Westonbirt. The superb quality of the varieties staged, the excellent cultivation the plants exhibited, and the tasteful arrangement of them in the group, were beyond praise. Next in importance was a magnificent group of Chrysanthemum blooms set out boldly in handsome vases and illustrating in the highest degree the decorative uses to which the large-flowered Chrysanthemums may be put. This was from Mr. NORMAN DAVIS, of the Framfield Nurseries.

There were many novelties at this meeting, and numerous awards were made. The ORCHID COMMITTEE recommended 4 First-Class Certificates and 4 Awards of Merit; the FLORAL COMMITTEE 13 Awards of Merit, these latter being awarded mainly to varieties of Chrysanthemum and Carnation.

The FRUIT AND VEGETABLE COMMITTEE recommended an Award of Merit to a variety of Damson named Merryweather.

At the afternoon meeting a lecture on "Birds of Our Gardens" was delivered by Mr. Cecil Hooper.

Floral Committee.

Present: W. Marshall, Esq. (chairman), and Messrs. C. T. Druery, Henry B. May, Jas. Walker, Jno. Green, T. W. Turner, G. Reuthe, J. F. McLeod, W. Cuthbertson, C. R. Fielder, H. J. Cutbush, Chas. Dixon, J. T. Bennett-Poe, H. J. Jones, C. E. Pearson, Chas. E. Shea, W. P. Thomson, E. H. Jenkins, M. J. James, Geo. Paul, Chas. Blick, Jno. Jennings, W. Howe, Rev. F. Page Roberts, R. C. Reginald Nevill, R. W. Wallace, and R. Hooper Pearson.

Mr. NORMAN DAVIS, Framfield, Sussex, showed a magnificent group of Chrysanthemums, for which a Gold Medal was awarded. The exhibit was accommodated at the end of the hall usually occupied by the platform, and it extended almost the whole length of the wall at that end. The manner of staging was only excelled by the quality of the flowers; not one inferior bloom was noticed, whilst the majority represented the very highest degree of perfection in culture. At the back overhung tall Palms, and as a centre-piece was arranged a plant of *Dracæna Victoria*; then on either side were tall epergnes filled with blooms of the yellow *Algernon Davis* and the bronze *W. King*, while in front of these was the white form of *W. King* and the somewhat similar variety *Mrs. Norman Davis*. Next, baskets on stands filled with beautiful single and decorative flowers, and, again, other large epergnes with the white incurved *Mrs. J. Hygate*, *Mrs. A. T. Miller*, and many more, the whole being interspersed with Palms, Ferns, *Codæums* (Crotons), and sprays of Red Oak and other autumn-tinted foliage.

Mr. H. J. JONES, Hither Green, Lewisham, and Keston, Kent, also contributed an excellent display of Chrysanthemums. The group was smaller than that shown by the last-named exhibitor, but all the blooms were of a high standard of merit, and the whole formed one of the features of the exhibition. Handsome vases, several feet in height, were used for the display of big flowers, a dozen or more in each, with autumnal-tinted foliage as relief. At the back were Bamboos, and in the foreground were smaller receptacles with decorative varieties and single flowers of large Japanese kinds. *Mrs. W. Knox* (yellow), *Reginald Vallis*, *George Terry* (a seedling with crimson florets having a golden reverse), *Jumbo*, H. J. Jones, 1908, and *Mrs. A. T. Miller* represent the finer of the big exhibition blooms. Baskets containing *Source d'Or* and *La Triumphant* were staged at either end, and a row of the pink-coloured *Mrs. Wingfield* formed a pleasing finish to the whole. (Silver-Gilt Floral Medal.)

A group of Chrysanthemums was staged by Mr. J. SPINK, Summit Road Nursery, Walthamstow. Large blooms of Japanese varieties in great variety were arranged in a setting of Palms, Ferns, *Codæums* (Crotons), with an edging of *Adiantum*. (Silver Banksian Medal.)

Other exhibits of Chrysanthemums were shown by Messrs. W. WELLS & Co., Merstham, Surrey (Silver Banksian Medal); and Mr. W. J. GODFREY, Exmouth, Devon.

Messrs. W. CUTBUSH & SON, Highgate, London, N., showed flowering greenhouse plants, *Liliums*, *Ericas*, *Astilbe* (*Spiræas*), *Azalea sinensis*, *Lily of the Valley*, *Nerine Fothergillii* major, &c., with *Crotons* (*Codæums*), Ferns, small Palms, *Ficus repens*, &c., interspersed. (Silver Flora Medal.)

Mr. S. MORTIMER, Rowledge, Farnham, Surrey, showed vases of Carnations draped with sprays of *Asparagus Sprengeri*. The flowers were of fine quality, and represented a selection of the best varieties in cultivation. (Silver Banksian Medal.)

Mr. G. LANGE, Hampton, showed Carnations of the winter-flowering type, including several new varieties (see Awards). The beautiful pink-coloured *Enchantress* was shown in exquisite form. White Perfection and other standard varieties were also seen in the best of condition. (Silver Flora Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, staged bunches of flowers of *Zonal Pelargoniums* in scarlet, salmon, pink, white, and other shades. The "pips" of some of the varieties were enormous in size; some must have measured 3 or 4 inches in diameter. The variety *Saxonia* is a rich, clear scarlet. Other good kinds are *Caronia* (pink), *Cymric* (purple "shot" with crimson), *Prince of Orange* (scarlet), *Campania* (new, pink), *Lady Folkestone* (pink), and *Mrs. Geo. Cadbury* (salmon). (Silver Flora Medal.)

Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, showed large blooms of Japanese Chrysanthemums as a background to winter-flowering Begonias, *Exacum macranthum*, and *Angelonia salicariæfolia*. At one end of the exhibit were fruiting plants of the *Citrus* tribe, and at the other a batch of the blue-flowered *Salvia Pitcheri* and the carmine-coloured *Begonia Mrs. Heal*. Messrs. VEITCH also staged as a separate group a collection of small Conifers suitable for the rock-garden. Many of these miniature trees were exceedingly handsome, both in foliage and in form, and all those following may be recommended for this kind of planting:—*Picea excelsa* *Gregoriana*, *Abies subalpina* (*lasocarpa*), *Retinospora filicoides* *tetragona aurea*, *Cupressus nootkensis compacta*, *C. Lawsoniana nana*, *Picea excelsa* *pygmæa*, *Pinus strobus pumila*, *Juniperus sabina*, *J. procumbens*, *Picea excelsa* *Clanbrassiliana*, *Pinus montana*, *Retinospora filifera aurea* (a conifer of magnificent colouring), *Taxus baccata* *Dovastonii*, and *Picea excelsa* *Remonti*. (Silver-Gilt Banksian Medal.)

Messrs. THOS. ROCHFORD & SONS, Turnford Hall Nurseries, Broxbourne, Herts., filled the whole of a large table with small plants of *Codæums* of a size useful for the embellishment of dwelling rooms. The collection embraced no fewer than 67 varieties, which included almost all the best in cultivation. As a selection of the finer, we may enumerate *Souvenir of Thomas Rochford*, a narrow-leaved variety with beautiful shades of colours; *Princess of Wales*, with long leaves that drooped gracefully below the pots; *Sunset*; *Hawkeri*, the yellow ground of this variety is mingled with green; *Le Comte*, a broad-leaved variety; *Flambeau*; *Mortii*; *Maurice Rouvier*; *Evansiana*, and *Warrenii*. (Silver-Gilt Flora Medal.)

Messrs. H. B. MAY & SONS, Upper Edmon-ton, London, N., showed a representative collection of *Davallias*—in all, 65 species and varieties of these beautiful Ferns. The centre of the group was occupied by a bold specimen of *D. fijiensis*. *Davallia solida* *superba* was also represented by a handsome plant. The graceful *D. tenuifolia* *Veitchii* has very finely-dissected fronds. Among other choicer and rarer kinds displayed were *D. amœna*, *D. repens*, *D. assamica*, *D. heterophylla*, *D. braziliense*, *D. Mayi*, and *D. parvula*. The last-named is the smallest of the genus. (Silver-Gilt Flora Medal.)

Messrs. WM. BULL & SONS, King's Road, Chelsea, again displayed ornamental-leaved foliage plants of stove and greenhouse varieties.

Messrs. JOHN PEED & SON, West Norwood, London, exhibited winter-flowering Begonias of the Turnford Hall, Agatha, and *Mrs. Leopold de Rothschild* varieties. The flowers made a

very bright display, and they had, as an edging, a row of a pretty variety of *Begonia Rex*.

LORD ALDENHAM, Elstree (gr. Mr. Ed. Beckett), showed forms of *Aster Amellus*. The seedlings showed diversity of colouring in their flowers; some were approaching white (see Awards).

Mr. L. R. RUSSELL, Richmond, Surrey, set up a very large group of berried shrubs, all of hardy species. The principal subjects were *Aucuba japonica*, *Cratægus pyracantha Lælandii*, golden-berried *Hollies*, *Pernettyas*, *Skimmia japonica*, and, as an edging, small plants of the pretty *Veronica Andersonii* *variegata*. (Bronze Banksian Medal.)

Messrs. BARR & SONS, King Street, Covent Garden, London, staged hardy flowers and a few pots of Alpine plants. A shoot of *Pyrus* (*Cydonia*) *japonica* contained a dozen or more fruits, many of which were as large as medium-sized Apples. Plants of *Nerine flexuosa alba* were nicely flowering, also the *Belladonna Lily* (*Amaryllis Belladonna*), *Asters*, *Chrysanthemums*, *Kniphofias*, *Physalis*, &c.

Mr. FRANK BRAZIER, Caterham Hardy Plant Nursery, Caterham, exhibited bamboo epergnes filled with perennial *Asters* and border Chrysanthemums, with a few spikes of *Pampas Grass* (*Gynerium*) as relief. (Silver Banksian Medal.)

Mr. G. REUTHE, Keston, Kent, showed Alpine and border plants in flower, including *Crocuses* in many species, *Colchicums*, *Sternbergia lutea*, *S. macrantha*, *Lilium philipinense*, *Hypericum olympicum*, *Tanakaë radicans*, &c.

AWARDS.

AWARDS OF MERIT.

Aster Amellus "H. J. Cutbush."—An excellent variety, with flowers about 2½ inches in diameter; colour reddish-mauve, deeper in shade than *Perry's Favourite*. It is said to grow 2 feet high. Shown by Mr. ED. BECKETT.

C. Rose Pink Enchantress.—This is a first-class flower of large size and good form, with broad, smooth petals, only faintly fringed. The colour is clear, but rich rose. This variety was shown by Mr. A. F. DUTTON, Iver, Bucks.

C. Beacon.—A brilliant, red-coloured, winter-flowering variety, with slightly-fringed petals. Shown by Mr. G. LANGE, Hanworth Road, Hampton, Middlesex, and Messrs. PAUL & SONS, Cheshunt.

C. Wincor.—This is a magnificent pink flower, of considerable size and excellent form. The petals are good and only slightly fringed. Shown by Mr. G. LANGE and Mr. A. F. DUTTON.

Chrysanthemum Mrs. Wakefield.—A variety suitable for market supply, or for the production of large blooms for home decoration. The flowers are of Japanese type, the florets reflexed, and the colour brownish-red. In size they are much too small for exhibition.

Chrys. F. W. Lever.—A Japanese flower of the largest size, florets broad and white, incurving a little at tips. The flower has a lemon-coloured centre. This is an exhibition variety of the first merit. These two varieties were shown by Mr. H. J. JONES.

Chrys. Clara Wells. This is a very large incurved flower. The florets are somewhat pointed at the tips, but the variety promises, nevertheless, to become a good exhibition flower.

Chrys. Clara Vurnum.—A decorative variety, with blooms 5 or 6 inches across; colour rich velvety crimson, the bronze reverse showing in the centre. These two varieties were shown by Messrs. W. WELLS & Co.

Chrys. Mrs. G. F. Coster.—A moderate-sized exhibition Japanese Chrysanthemum, of apricot or chestnut yellow, the tint being exceedingly attractive. It is a smooth flower of considerable refinement.

Chrys. Splendour.—An incurved Japanese flower, of dull crimson colour, with bronze reverse. The florets are enormously wide, and the bloom contains unusual substance. The two varieties named above were shown by Mr. SILSBURY, Shanklin.

Chrys. Romance.—This variety has a very rich yellow incurved flower that will be suitable for exhibition. Shown by Mr. W. J. GODFREY, Exmouth Nurseries, Devon.

Cyclamen latifolium fimbriatum giganteum.—Mr. T. JANNOCK, Dersingham Nurseries, Sandringham, exhibited varieties of *Cyclamen* obtained from crossing *C. latifolium* with the strain known as "Papilio" (see figs. in *Gardeners' Chronicle*, May 22, 1897). The petals are flattened and spread out, as shown in fig. 112 in the issue already mentioned, but they are broader, and the flower much more impressive than the flower illustrated. The natural appearance of the flower has become perfectly obliterated. The Award of Merit was for the strain.

Nerine "F. D. Godman".—This variety may be described as like a silvery-red form of *N. Fothergillii* major. The 5-inch pot contained only three bulbs, and each had produced a first-class inflorescence bearing about one dozen blooms. Shown by F. D. GODMAN, Esq., Horsham.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, De B. Crawshaw, W. Boxall, F. Sander, F. M. Ogilvie, G. F. Moore, H. T. Pitt, A. Dye, A. A. McBean, W. Cobb, R. G. Thwaites, H. G. Alexander, W. P. Bound, W. H. Young, W. H. White, H. A. Tracy, F. J. Hanbury, and R. Brooman-White.

The meeting was rendered exceptionally attractive by the beautiful and exquisitely-arranged group for which Major G. L. HOLFORD, C.V.O., C.I.E. (gr. Mr. H. G. Alexander), was awarded the Society's Gold Medal and the Gold Lindley Medal, the latter in recognition of the superb cultivation of the plants. The finest varieties were arranged in batches, the centre being of the gorgeously-coloured Westonbirt strain of *Cattleya Fabia*; and at intervals were clusters of *Vanda cœrulea*, *V. Kimballiana*, varieties of *Cattleya Mantinii*, *C. Mrs. J. W. Whiteley*, and other showy varieties. The group, which occupied a space of 200 square feet, contained over 100 distinct varieties, most of them hybrids raised at Westonbirt. The species included finely-flowered *Oncidium varicosum*, with graceful sprays of large, yellow blooms; specimen plants of *Vanda Kimballiana*, fine varieties of *Odontoglossum crispum*, *Dendrobium Phalaenopsis Schröderianum* of varying rose tints, and a nice example of the pure white variety *hololeuca*; the clear blue *Vanda cœrulea*, *Oncidium tigrinum*, *O. Jonesianum*, *Phalaenopsis Rimestadtiana*, *Cymbidium Mastersii*, *C. erythrostylum*, fine forms of *Cattleya labiata*, *C. Bowringiana*, *C. Dowiana aurea*, *C. Warscewiczii*, and its showy and fragrant hybrid *C. Hardyana* in several varieties, including one of the rare variety *alba*. Of the hybrids, the finest were the forms of *C. Fabia* and *C. Mantinii*, the Westonbirt variety of which is of a rich rose-purple with maroon lip veined with gold; *C. Dusseldorfei* Undine, *C. Enid*, *C. Molle*, *C. Wendlandiana*, *C. Cleopatra*, *C. Thayeriana*, *C. Lord Rothschild*, *C. Mrs. J. W. Whiteley*, *C. Mrs. Pitt*, and *C. Waldemar*. Two new *Lælio-Cattleyas* were shown, *L.-C. Memnon* (elegans × *Mendeli*) and *L.-C. Hildegard* (*Warscewiczii* × *Decia*), both pretty and distinct; and other *Lælio-Cattleyas* noted were *L.-C. Baroness Schröder*, *L.-C. Clive*, *L.-C. Helena*, *L.-C. elegans*, *L.-C. Cassiope* (Westonbirt variety), *L.-C. Berthe Fournier*, *L.-C. Lustre*, *L.-C. Rowena*, and *L.-C. luminosa*. The hybrids of *Brassavola Digbyana*, with their large, rose-tinted, fringed flowers included *B.-C. Helen*, *B.-C. Digbyano-Warscewiczii*, and *B.-C. Digbyano-Mossiae*. *Sophro-Cattleya Nydia* and *S.-C. Chamberlainiana* afforded bright colours, and the *Cypripediums* were represented by a selection of varieties of *C. insigne*, *C. Fairrieanum*, *C. Tityus superbum*, *C. Danté*, *C. Charlesianum superbum*, and other hybrids.

H. S. GOODSON, Esq., Fairlawn, West Hill, Putney (gr. Mr. G. E. Day), was awarded a Silver Flora Medal for a very meritorious group containing many excellent specimens, the finest being *Cattleya Fabia Goodsonii*, a grand flower of rich rose-purple and crimson colour; and *C. Octave Doin* "Herbert Goodson," both of which secured First-Class Certificates last year. The new plant in the group was *Cattleya Alicia* (*Iris* × *labiata*), a very pretty and distinct variety, which secured an Award of Merit. A selection of well-flowered *C. insigne* *Sanderæ* had with them the remarkable three-lipped *C. i. Oddity*, and other good forms, and among other *Cypri-*

pediums noted were *C. H. S. Goodson*, a very large, finely-formed, and distinct hybrid, *C. Maudia*, &c. Some finely-flowered plants of *Pleione lagenaria* were in front and others remarked were *Brasso-Cattleya Digbyano-Warscewiczii*, *B.-C. Digbyano-Mendeli*, good forms of *Cattleya labiata*, *Miltonia Bleuana*, *Oncidium bicallosum*, *O. cucullatum*, &c.

Messrs. JAS. CYPHER & SONS, Cheltenham, were voted a Silver Flora Medal for an extensive group, the middle of which was occupied by a large number of the pretty *Cypripedium* *Fairrieanum* and several of its hybrid *C. Arthurianum*. On each side were arrangements of other good *Cypripediums*, among which were *C. insigne* *The Queen*, a very well-marked form; *C. i. Sunray*, with a yellowish glow in the flower and dotted raylike lines on its broad petals; *C. i. Commander Walter*, also distinct; *C. i. Harefield Hall*, *C. i. Oddity*, and many others. Of the hybrids, *C. triumphans*, Westonbirt variety, was the best dark-coloured. Others well represented were *Epidendrum ciliare*, *Dendrobium Phalaenopsis*, *Cymbidium*, *Masdevallias*, &c.

JEREMIAH COLMAN, Esq., Gatton Park (gr. Mr. W. P. Bound), was awarded a Silver Banksian Medal for a neat group of showy hybrids, all raised at Gatton Park, and which included good *Cattleya Fabia*, *C. Iris*, *C. Adula*, two pretty and dissimilar forms of *C. Chloris*, *C. Portia* *Gatton Park* variety, a fine flower; *C. Wendlandiana*, *C. Mrs. Pitt*, *C. Brownia*, *Lælio-Cattleya Nysa*, *L.-C. Phryne*, &c.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, were awarded a Silver Banksian Medal for an attractive group, principally hybrids, among which were noted a pretty, light-coloured form of *Cattleya Lord Rothschild*, finely-coloured *C. Mantinii nobilior*, *C. Portia*, and other hybrids of *C. Bowringiana*; a very fine *Lælio-Cattleya Epicasta*, *L.-C. Andrea*, *L.-C. Tenos*, and other hybrids. The centre was of the clear yellow *Cypripedium insigne* *Sanderæ*; and at one end were *C. Baron Schröder*, *C. Actæus*, &c.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, secured a Silver Banksian Medal for a good group containing a fine example of their pure white *Brasso-Cattleya Queen Alexandra*; a distinct form of *Cypripedium Thalia*, the noble *C. Zeno*, a *C. insigne* *Harefield Hall* hybrid, and larger than its parent; varieties of *Cattleya labiata*, including a good white form, *Cattleya Adula*, *C. Iris*, *C. Vulcan*, *C. Octave Doin*; a splendid form of *Odontoglossum Uro-Skinneri*, and other *Odontoglossums*, and a pretty *Zygotepalum* obtained between *Z. maxillare* and *Colax jugosus*.

Messrs. HUGH LOW & Co., Enfield, obtained a Silver Banksian Medal for a group in which the varieties of *Cattleya labiata* were well displayed, seven white forms being included. With them were *Houlletia Brocklehurstiana*, *Ancistrocheilus Thompsonianus*, *Cattleya Bowringiana*, *Low's* variety, and another finely-coloured form with five spikes, bearing together over 80 flowers, *Odontoglossum crispum*, one being nicely spotted, &c.

Messrs. ARMSTRONG & BROWN, Tunbridge Wells, were awarded a Silver Banksian Medal for a group of hybrids containing several forms of their pretty *Cattleya Armstrongia*, *C. Iris*, *C. Adula*, and other pretty hybrids.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), showed the rare natural hybrid *Odontoglossum Duvivierianum* and *Lælia pumila alba*.

J. BRADSHAW, Esq., The Grange, Southgate (gr. Mr. Whitelegge), showed the fine white *Cattleya Harrisonia alba superba* and *C. labiata Augusta*. (See Awards.)

F. DUCANE GODMAN, Esq., sent *Cypripediums* *Phædra superba*, with a good, white, dorsal sepal blotched with rose colour.

Monsieur MERTENS, Ghent, showed three hybrid *Odontoglossums*, *Miltonia Bleuana*, and a large-flowered *M. vexillaria*.

Miss WILLMOTT, Warley Place, Great Warley, showed a very handsome form of *Cattleya Minucia*.

DE B. CRAWSHAY, Esq., Rosefield, Seven-oaks (gr. Mr. Stables), showed the exceptionally finely-blotched *Odontoglossum crispum* *Boadicea*, with silver-white sepals and petals, strongly tinged with rosy-lilac and bearing attractively-displayed dark red blotches. Tip white, with a large chestnut-red blotch in front of the yellow crest, and several smaller

blotches on each side. Also *O. crispum* *Imperatrix*, a model flower, white slightly tinged with mauve on the sepals, which also bear brownish spots on the lower halves.

J. SHEPHERD, Esq., Twyford, Berks., sent a very fine specimen of *Lælio-Cattleya Tiresias*.

AWARDS.

FIRST-CLASS CERTIFICATE.

Cattleya Fabia gigantea (labiata × *aurea*), from Major G. L. HOLFORD, C.V.O., C.I.E. (gr. Mr. Alexander).—The finest of the superb Westonbirt strain of this showy winter-flowering Orchid. Sepals and petals of a rich, rosy-mauve colour; the large labellum deep ruby-crimson, with a dark-gold centre and orange lines from the base.

Cattleya fulvescens, Westonbirt variety (*Forbesii* × *aurea*), from Major G. L. HOLFORD.—Flowers larger than any yet shown. Sepals and petals yellowish buff, the large, crimped lip orange, changing to yellow, and with pretty rose-coloured markings of different shades, the darkest being in the centre.

Cattleya labiata alba Purity, from Major G. L. HOLFORD.—A perfectly pure white variety, with chrome-yellow disc to the lip.

Odontioda Devossiana (O. Edwardii × *Cochlidoda Nozaliana*), from Monsieur H. GRAIRE, Amiens.—An excellent novelty. The plant bore a compact inflorescence about 2 feet high, the upper half being furnished with about two dozen flowers, each 1 inch across, and borne on a four-branched spike. Sepals lanceolate, the lateral ones reflexed; petals ovate-acuminate, both deep blood-red; lip three-lobed, purplish-red, lighter at the apex; crest yellow.

AWARDS OF MERIT.

Sophro-Lælio-Cattleya Medea (C. bicolor × *S.-L. læta Orpetiana*), from Major G. L. HOLFORD.—A dwarf hybrid bearing in its purplish flower a distinct resemblance to *C. bicolor*, especially in its deep violet-purple lip.

Lælio-Cattleya Epicasta "The Premier" (L. pumila × *C. Warscewiczii*), from JEREMIAH COLMAN, Esq., Gatton Park, Reigate (gr. Mr. W. P. Bound).—One of the largest, most perfect in shape, and finest in colour of the *L. pumila* hybrids. The broad sepals and petals are white delicately flushed with rose-pink; the front of the well-rounded lip deep purplish-crimson.

Cattleya Alicia (labiata × *Iris*), from H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day).—A pretty and distinct hybrid, with rosy-lilac sepals and petals; the fine labellum, which is protected as in *C. Iris*, rosy-crimson.

Cattleya labiata Augusta, from J. BRADSHAW, Esq., The Grange, Southgate.—A fine white variety with distinct deep chrome-yellow marking in the tube of the lip, which has a very slight trace of pink in front.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq. (in the chair), and Messrs. Jas. Cheal, J. W. Bates, Alex. Dean, Geo. Kelf, A. R. Allan, J. Davies, J. Jaques, G. Reynolds, Chas. Foster, P. D. Tuckett, J. McIndoe, Owen Thomas, C. G. A. Nix, W. Poupart, A. H. Pearson, and James Vert.

Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, displayed fruits of a hybrid fruit obtained from the Quince × Pear *Bergamotte Esperen*. The fruits were named *Pyronia*. Some resembled the first-named parent, and others were similar to the Pear, although all were raised from the seeds of one fruit.

There were also seen the usual array of seedling Apples, sent for award, but none was found to merit that distinction.

Messrs. GEO. BUNYARD & Co., LTD., Royal Nurseries, Maidstone, showed a magnificent exhibit of Pears. The collection embraced nearly one hundred varieties, and was of much educational value. President Osmanville is a large fruit with a rich yellow skin; *Doyenné du Comice* was represented by a magnificent sample. *Beurré Diel*, *Beurré Alex. Lucas*, *St. Luke* (a large, russety fruit), *Beurré Bosc*, *Gilgill*, *Winter Windsor*, *Chiojuro* (a Japanese variety of the *Bergamotte* type with a round eye, showing no trace of the stamens or sepals, and having a delicate russety exterior), *Princess*, *Beurré Jean Van Geert*, *Magnate*, *President Barabe*, and *Ramilies* were all of exceedingly fine appearance. (Silver-Gilt Knightian Medal.)

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, showed 42 dishes of Apples and Pears, all highly-coloured fruits and of medium size. The best dishes were those of Bismarck, King of the Pippins, Peasgood's Nonsuch, Warner's King, Blenheim Pippin, Saltmarsh Queen, and Bramley's Seedling. (Silver Banksian Medal.)

Miss C. M. DIXON, Elmcroft Nursery, Westergate, Chichester, staged a dozen Melons of the Hero of Lockinge type, and labelled Lawson's Favourite and Elmcroft Beauty. (Silver Banksian Medal.)

Fifty very excellent bulbs of Ailsa Craig Onion were shown by R. H. LING, Esq., The Braes, Berkhamsted. (Bronze Banksian Medal.)

Mr. R. W. GREEN, Wisbech, showed a very large number of varieties of Potatoes. All the types of this vegetable were represented—kidney, flat, round, coloured, &c.—and the varieties embraced the newer as well as the older standard kinds. The tubers were especially clear of skin, and, staged in fancy baskets on a green ground-work, made as pleasing an exhibit as is possible with this subject. (Silver Knightian Medal.)

AWARD OF MERIT.

Damson Merryweather.—At the meeting of the Committee held on the opening day of the autumn fruit show, a variety of Damson was presented under this name for an award. It was decided to subject the fruits to a culinary test, and this having proved satisfactory, an Award of Merit was granted. The fruits were sent by Mr. W. MERRYWEATHER, Southwell.

Scientific Committee.

OCTOBER 15.—*Present:* Mr. E. A. Bowles, M.A., F.L.S. (in the chair); Dr. J. B. Farmer, F.R.S., Rev. W. Wilks, M.A., Dr. A. B. Rendle, M.A., Messrs. C. E. Shea, J. T. Bennett-Poe, C. T. Druery, W. C. Worsdell, W. Cuthbertson, F. J. Baker, C. E. Hennessey, F. W. Moore, F. J. Chittenden (hon. secretary), and numerous visitors.

The up-country Tea root disease of Ceylon.—Dr. C. B. PLOWRIGHT sent specimens of bark and roots of Tea plants, illustrating the following note: "Mr. T. Petch, the Government mycologist of Ceylon, sends specimens of this disease. It is due to *Polyporus hypolateritia* of Berkeley, a species which is now allocated to the genus *Poria*. It is most prevalent above 4,000 feet, and is easily distinguished from the disease caused by *Rosellinia*. If a dying bush be uprooted the roots are seen to be covered with small white raised patches or knobs of mycelium about one-twelfth inch in diameter with reddish raised margins. From these nodules a mycelium spreads to other roots, white at first, but subsequently forms a thick cord with a tough red coat, while the mycelium between the bark and the wood forms a thin continuous white sheet. The fructification (the *Poria*) is generally formed on the stem just above the ground, but it may be formed on the surface of the soil. In one experimental culture it was produced on the under side of a flower pot, an illustration of the travelling power of the fungus. The fungus is white with a red edge and under surface, hence the specific name which was given it by Berkeley to specimens from India. Its life history as a parasite has been worked out by Mr. Petch."

Hybrid Orchids.—Mr. F. W. MOORE, V.M.H., made some interesting remarks upon two hybrid Orchids sent by Mr. H. J. CHAPMAN. The first was the result of intercrossing the two albinos *Cattleya intermedia alba* and *C. Schroderae alba*. The flowers of the cross had the three sepals and two of the petals with a rosy tinge, while the lip was at the edges of the basal portion a little deeper in colour, and had the terminal portion magenta with a stripe of the same colour running towards the throat, the only portion of the flower that was pure white being the inner part of the throat on each side of this stripe. The colour, therefore, showed reversion to the typical form; the shape, however, of the flower showed traces of both parents. The second flower was the result of a cross between the so-called albino forms, *Cypripedium insigne Sanderæ* and *C. callosum Sanderæ*. This, like the first, showed distinct traces of the colouration of the typical forms of both parent species, thus again reverting. These two specimens seem to illustrate in another group of plants that phenomenon that

has been pointed out by the Mendelian workers with Sweet Peas, where the colour-producing factors that were present separately in the two parents, so that they were albinos, meet in the offspring and produce colour. As Mr. MOORE pointed out, not all albino Orchids when crossed produced coloured flowers, but albinos may be produced. The Orchids were from the collection of N. C. COOKSON, Esq., of Oakwood, Wylam-on-Tyne.

Injury to Apple twigs. Mr. F. J. BAKER, A.R.C.S., showed some Apple twigs that had been injured by too tightly binding the shoots together. The shoots had been washed in May with a somewhat strong solution of paraffin, and the result had been that the injuries to the stems appeared very like cankered spots. The wounds were now beginning to callus over.

Cup-shaped leaves of Pelargonium.—Mr. W. C. WORSDELL showed some leaves of *Pelargonium zonale* from Kew, which had grown in a cup-shaped manner. Each of these was terminal, a fact that accounted for the form. One of the cup-like leaves bore a second springing from its outer surface. These leaves probably took the place of the flowering shoots, which would have been developed in the same position in a normal season.

NATIONAL CHRYSANTHEMUM.

OCTOBER 28.—A meeting of the Executive Committee was held at Carr's Restaurant, Strand, on the above date, Mr. Thomas Bevan presiding. It was announced that Mr. C. E. Shea would occupy the chair at the annual dinner to be held on November 26, and that he would be supported by Sir Albert Rolitt, who has been nominated for president next year. Arising out of the correspondence was the resignation of Mr. Casleton from the Executive Committee and the consideration of the protest handed in at the last show.

The Secretary submitted the usual financial statement to date. It was stated that the prize money awarded at the October show would be paid at the end of the year. Arrangements were made for carrying out the details of the November show, and it was resolved that a Dean Memorial Medal be awarded by the Floral Committee to the exhibit that may be considered specially worthy. The award will be confined to Chrysanthemum exhibits. It was also resolved that honorary awards be made to exhibits of sundries. Five new Fellows and twenty-one ordinary members were elected.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

OCTOBER 17.—*Committee present:* Messrs. E. Ashworth, R. Ashworth, Ashton, Cowan, Cypher, Duckworth, Keeling, Parker, P. Smith, H. Smith, Stevens, Shiel, Ward, Warburton, Walmsley, and Weathers (hon. sec.).

A. WARBURTON, Esq., Haslingden (gr. Mr. Dalgleish), exhibited an excellent collection of Orchids, consisting of a group of *Cypripediums*, another of miscellaneous Orchids, and a group of species of *Cattleyas* and *Lælias*. Each group was in competition for the various trophies which have been offered by Messrs. Sander and Sons, W. Thompson, Esq., and Messrs. H. Low & Co., and they were awarded respectively a Silver Medal, Silver-Gilt Medal, and a Bronze Medal. Among the plants shown was *Cattleya labiata* var. *Empress*, a white form with coloured lip, and this was awarded a First-Class Certificate; while Awards of Merit were granted to *Cattleya* × *fulvescens*, Vine House variety; *Cattleya* × *Pittiana*, Low's variety; and *Cypripedium* × *Bingleyense*, Warburton's variety.

W. THOMPSON, Esq., Stone (gr. Mr. Stevens), exhibited *Cypripedium* × *triumphans*, Westonbirt variety, C × "St. Alban," and C. Charlesworthii var. *grandiflora*.

J. H. CRAVEN, Esq., Keighley (gr. Mr. Corney), staged a meritorious group, notable plants being *Cypripedium* × *Keighleyense*, a good hybrid, the parents of which were C. × *nitens* magnificum, Balls' var. × C. × *Arthurianum*; also C. × *Niobe*, Westonbirt variety; C × "Rene," C. × *Maudiae* var. *magnificum*, and C. × *Arthurianum pulchellum*. A First-Class Certificate was awarded to C. × *Keighleyense*, and a Silver Medal for the group.

Messrs. KEELING & SONS, Westgate Hill, Yorks., gained an Award of Merit for a plant of *Cirrhopetalum ornatissimum*.

E. ROGERSON, Esq., Didsbury, sent the beautiful natural hybrid *Cattleya* × *Countess* of Derby, which was originally in the Stand Hall collection, and has only appeared at public exhibition on two occasions. The specimen was in good health, and the flowers were very beautiful; the nearest plant allied to this is the white form of *Cattleya* × *Hardyana*. A First-Class Certificate was awarded to the hybrid. *Cattleya* × *Fabia* var. "Mrs. Rogerson" also obtained a First-Class Certificate. *Cypripedium* × *Actæus* var. *revoluta* was also shown by Mr. ROGERSON.

Messrs. LINDEN & Co., Brussels, exhibited *Odontoglossum crispum* var. "Rêve d'Or." An Award of Merit was conferred on the plant.

Mr. W. BOLTON, Warrington, obtained an Award of Merit for *Cypripedium* × *Wootonii* var. *rubens*.

H. J. BROMILOW, Rainhill (gr. Mr. Morgan), obtained a Silver Medal for a collection of *Cypripediums*, among which were *Cypripedium* × *Maudiae* var. *magnificum*, C. × *Kobe*, C. insigne, Harefield Hall variety, and C. insigne var. *Chantinii*, Linden's variety.

Messrs. J. W. MOORE, LTD., Rawdon, near Leeds, staged a miscellaneous collection of plants, in which was a distinct form of *Cattleya Schroderae*. On being placed before the committee, that body expressed a desire to see the plant again.

J. MACARTNEY, Esq., Bolton (gr. Mr. Holmes), exhibited a plant of *Cypripedium* × *Shillanum* in a pleasing group, which was awarded in two of the competitions a Bronze Medal and a Silver Medal.

Mrs. H. H. BOLTON, Newchurch, exhibited *Cattleya* × *Fabia*, "Heightside variety," and was awarded a Silver Medal for a collection of plants.

Messrs. CHARLESWORTH & Co., Bradford, gained Awards of Merit for *Cattleya labiata* var. *Emperor*.

Messrs. CYPHER & SONS, Cheltenham, were awarded a Silver Medal for a group of plants in many varieties.

A Cultural Certificate was awarded to A. WARBURTON, Esq., for a fine specimen of *Cattleya* × *Fabia* var. *ardentissimum*. P. W.

DEBATING SOCIETIES.

MANCHESTER HORTICULTURAL.—The annual general meeting of this society was held recently. The president, Mr. James Brown, occupied the chair, and there was a large attendance of the members. The secretary's and treasurer's reports were satisfactory. The officers of last year were all re-elected, after which some twenty of the members and their friends dined at the Mosley Hotel. A pleasant feature of the meeting was the presentation of a handsome timepiece to Mr. Charles Paul, the honorary secretary, in recognition of his long and gratuitous services on behalf of the society. The chairman, Mr. Abraham Stansfeld, proposed the chief toast, "Prosperity to the Society." He regarded professional horticulturists, or, in plain terms, "gardeners," as an under-paid, under-estimated class of men, considering the battle they had constantly to wage against numerous difficulties, of which, in Lancashire, climate was not the least. He had just been reading Mr. Lloyd-George's confession of his ignorance of the secret of Lancashire's success as a cotton-spinning centre—the humidity of the climate. But that which made Lancashire's success industrially made the Lancashire gardener's difficulty greater, and, considering the damp and smoke against which he had to struggle, he thought that the result, as was shown at the exhibitions, was wonderful.

SALISBURY AND DISTRICT GARDENERS'.—At the weekly meeting of the above society, held on the 24th ult., the night was again devoted to questions. Mr. Tucker occupied the chair, and Mr. Gullick opened the debate. The attendance was not large, but many of the members present took part in the discussion. A vote of thanks was accorded the Earl of Pembroke for his kindness in providing the society with tables upon which to stage the exhibits of flowers, &c.

PEPPARD AND DISTRICT GARDENERS'.—The members of this society held their second meeting of the session on October 24, when Mr. Tubbs, of Crowsley Park Gardens, gave a paper on "The Cultivation of Chrysanthemums"; a good discussion followed the reading of the paper. W. G. W.

DEVON AND EXETER GARDENERS'.—The opening paper of the new session was given on October 23, by Mr. Francis George Heath, his subject being "Trees, Flowers, and Ferns." Mr. Heath furnished many beautiful wood-pictures of sylvan scenery in the county of Devon and in the New Forest, exhorting the members to admire the works of nature so lavishly displayed around them. Mr. P. C. M. Veitch occupied the chair, and made some interesting and appropriate remarks in introducing the lecturer. The preceding gathering formed the annual meeting. The Mayor of Exeter presided. The secretary's and the treasurer's reports were read and adopted, and the officers for the ensuing year elected. A. H.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending October 26, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The weather was generally unsettled, and rain frequent, but most parts of England experienced considerable intervals of sunshine; and in England S. and E., as well as in Scotland N., the rain was usually slight. Thunder was heard at Tunbridge Wells early on the morning of the 20th.

The temperature was above the mean in all districts, except Ireland S., the excess being greater in Scotland and the East of England than elsewhere. The highest of the maxima were recorded during the early days of the week, and ranged from 64° in the English Channel and the Midland Counties to 59° in Scotland E. and W. The lowest of the minima, which occurred at most stations on Friday or Saturday, were no lower than 45° in the English Channel, but elsewhere they varied from 33° in Ireland N. and Scotland N. to 29° in England N.W. Frost on the grass was recorded over a large part of the Kingdom, the lowest readings reported being 23° at Crathes, 24° at Harrogate, and 25° at Newton Regis and Birmingham.

The mean temperature of the sea differed little from that of the preceding week. The actual values ranged from 56·7° at Plymouth and 56·4° at the Shipwash Lightship, to rather below 50° in several parts of the Scottish coast, and to 48° at Lerwick.

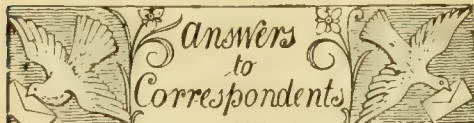
The rainfall exceeded the mean in Ireland, the west of Scotland and the south-western and central counties of England, but was less elsewhere. The excess was greatest in Ireland and the deficit greatest in Scotland N. and England E.

The bright sunshine was deficient in Ireland and Scotland, but was above the average in England. The percentage of the possible duration ranged from 49 in the English Channel, 39 in England S., and 38 in England S.W., to 27 in Ireland N. and to between 17 and 10 in Scotland.

THE WEATHER IN WEST HERTS.

Week ending October 30.

The most sunless week since January. This was on the whole a rather cold week. The first two nights were the only very cold ones, and on one of them the exposed thermometer showed 5° of frost, or a lower reading than at any previous time in October. The ground still remains warm for the time of year, the temperature at 2 feet deep being about 1° warmer, and at 1 foot deep about 2° warmer, than is seasonable. Rain fell on three days, but to the total depth of less than half-an-inch, making this the driest week of a very wet month. There was no measurable percolation through the soil gauge, on which short grass is growing, until yesterday, but nearly two gallons of rain-water came through the bare soil gauge during the week. The sun shone on an average for only 54 minutes a day, which is not more than a third of the average daily duration of bright sunshine at the end of October. Calms and light airs alone prevailed. The mean amount of moisture in the air at 8 p.m. exceeded a seasonable quantity for that hour by as much as 11 per cent. E. M., Berkhamsted, October 30, 1907.



••• The Editor will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for forming Supplementary Illustrations to this Journal

APPLE SHOOT WITH SWELLING: C. C. The injury is caused by American blight—a species of aphid. Your shoot contains numbers of these pests, and you must destroy them by an application of some insecticide. A suitable wash is composed of 10 lbs. of caustic soda, 10 lbs. of carbonate of potash, and 2 or 3 lbs. of soft soap dissolved in 100 gallons of water. The bark should be painted in winter with a mixture of 1 lb. of soft soap, 1 gallon of lime, and a small quantity of size mixed to form a thick whitewash.

APPOINTMENTS IN THE LONDON PARKS: E. S. The responsible positions are usually filled by the appointment of members of the staff. You are quite right in supposing that it is good experience which is necessary to qualify you for taking the best positions in this or any other branch of gardening.

CANVASSING FOR BOOKS: Correspondent. If you could show that the order for the book was given on the condition the man obtained a situation for you it would probably invalidate the agreement. But it appears that whilst you signed your name for the book the rest of the agreement was verbal. Consult a solicitor.

CARNATIONS: *Lapageria*. The tips of the leaves are suffering from a diseased condition that has been called "Stigmamose." This was at first believed to be Bacteriosis, but it has since been discovered to be due to punctures of insects—which perhaps introduce bacteria. The best preventive is to destroy all the

minute insect life, by using some approved insecticide. We fail to discover on the leaves the aphid you mention.

CHRYSANTHEMUMS: W. C. The petals themselves give no clue to the cause of their discoloration and falling off. There is no fungal disease, and the failure must be due to the surrounding conditions or some error in treatment.

COLEUS AND CUCUMBER ROOTS DISEASED: *Eelworm*. You are quite correct in ascribing the damage done to your Cucumber and Coleus to the attacks of eelworms. The plants are badly infested with the pests, which are a species of *Heterodera* (probably *H. radiculicola*). The best course to pursue is to burn the roots together with the infected soil, as it is impossible to ensure killing the animals in any other practicable way.

EMPLOYMENT IN AMERICA: C. G. The contract should be made after your arrival in the States. We do not think the wages of £120 a year in America would be more than equal to £100 if paid in this country.

GRAPES: W. Peters. The berries are extremely large, and, though some of them are more or less hollow, lacking firmness, the flavour is certainly as good or better than that of Gros Colmar. We cannot recommend the seedling as a first or even second rate variety, but at the same time it is likely that well-coloured bunches would attract buyers in the market, for it has been proved again and again that the public appreciates the quality of "size."

INDIAN NAME: C. J. G. The Nim, or Neem Tree, is *Melia Azadirachta*, belonging to the genus which furnishes mahogany. A full account of its products, such as gum, dye, fibre and oil is given in Watt's *Dictionary of the Economic Products of India*, v. 211. See also Beddome's *Flora Sylhetica*, t. 14. It is stated that the sweet pulp of the fruit is eaten in the Bombay Presidency, especially in times of scarcity. The tree is in cultivation at Kew, and is referred to in the Guide to Museum No. 1.

MARKET GARDENING: T. C. There appears to be no reason why you should not succeed, having had the excellent experience which you relate in your letter. The district being a manufacturing one the population is considerable, and there are convenient means of conveying the produce to the local markets. The degree of success you may obtain will depend upon the business capacity you possess, and the amount of energy you are capable of putting into the business. We assume that your capital is sufficient for the initial outlay that is necessary, and to provide for the payment of the working expenses for the first year.

MATS FOR THE GARDEN: Mrs. K. Apply to the horticultural sundriesmen, whose addresses will be found in our advertising columns.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time; they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers.* **FRUITS:** T. B. R. Doyenné du Comice; 2, Passe Colmar; 3, Baron de Mello; 4, Jalousie de Fontenay; 5, Bishop's Thumb; 6, Beurré Capiaumont.—W. P. 1 and 2, Although differing so much in outward appearance both are Beurré Superfin. The russety fruits are generally the better flavoured.—A. M. 1, Black Worcester; 2, Beurré Clairgeau; 3 and 4, Beurré Bachelier; 5, Beurré Sterckmans; 6, Beurré Superfin.—*Correspondent* (no letter enclosed). 1, Withington Fillbasket; 2, Mank's Codlin.—A. A. 1, Brockworth Park; 2, Comte de Lamy; 3, Conseiller de la Cour; 4, Autumn Nelis; 6, Jalousie de Fontenay.—C. B. 1, Beurré Hardy; 2, Chaumontel; 3, Pitmaston Duchess; 4, not recognised; 5, Fondante d'Automne; 6,

not recognised.—E. Bennett. 1, Wiltshire Deliance; 2, Sandringham; 3, Radford Beauty; 4, White Nonpareil; 5, Forfar.—J. W. S. 1, Matthews's Eliza; 2 and 3, Flemish Beauty; 4, Old Hawthornden; 5, King of the Pippins.—A. A. Temple. The particulars you give are very interesting, but of course it is an erroneous statement that these small Apples or Crabs will grow in monastery gardens only. We do not know of any particular name by which the fruits are known.

PLANTS: F. N. *Kniphofia aloides* var. *grandiflora*.—*Odorus*. 1, *Pelargonium tomentosum*; 2, *P. viscosissimum*; 3, *P. radula* major; 4, *P. quercifolium* var. *Mrs. Douglas*; 5, *P. quercifolium* (type); 6, *P. crispum*; 7, *P. capitatum*; 8, *P. Prince of Orange* (a bad example). Shoots in every case should be sent, not merely leaves.—J. G. Poison Ivy, *Rhus Toxicodendron*.—H. J. M. *Arbutus Unedo*.—A. D. W. 1, Malformed *Quercus pedunculata*; 2, *Capparis spinosa* (Caper).—E. H. 1, *Aster vimineus*; 2, *A. diffusus horizontalis*; 3, *Aster ericoides*; 4, *Eupatorium Weinmannianum*; 5, *Lavandula dentata*; 6, *Adiantum Capillus-Veneris*, Japanese form.—*Foreman*. 1, *Elæagnus pungens aureo variegata*; 2, *Ginkgo biloba*; 3, *Cotoneaster Simonsii*; 4, *Cupressus Lawsoniana viridis*; 5, *Cupressus Lawsoniana glauca*; 6, *Cupressus Lawsoniana*.—*Warwick*. *Epidendrum prismatocarpum*.—A. T. O. 1, *Oncidium cucullatum*; 2, *Oncidium cheiroporum*; 3, *Masdevallia simul*.—A. H. L. *Cosmos bipinnatus*, white variety.—J. B. The plant is *Hibiscus syriacus*, as we suggested.

NOTICE TO TERMINATE EMPLOYMENT: G. B. The first intimation may be regarded as the notice. Consult a solicitor.—G. H. S. We do not know the arrangements which existed between the gardener and yourself. If you feel that the action was illegal it will be wise to consult a solicitor.

PARTI-COLOURED CHRYSANTHEMUM: H. B. If you refer to your back numbers of the *Gardeners' Chronicle* you will see in the issue for December 22, 1906, p. 436, an illustration of a similar instance of sporting in a Chrysanthemum flower. The abnormality is attributed to a partial reversion to an ancestral form.

ROSE LEAVES DISEASED: H. J. M. The black markings on your Rose leaves are caused by a fungus—*Phragmidium subcorticatum*. In the spring time this pest is of a bright orange-red colour, for which reason it is known as orange rust fungus, but at this season it assumes the dark-coloured stage seen in your specimens. Burn all the fallen foliage, and next spring and summer spray the plants with the Bordeaux mixture or with ammoniated carbonate of copper solution at intervals.

ROSES FAILING TO OPEN: J. R. The condition as seen in the flowers you send is due entirely to wet or dull weather. Some varieties are very susceptible to decay in the bud through these causes.

SEEDS: A Very Old Subscriber. The seeds found among the grains of the Wheat are those of *Lychnis Githago*.

SMALL HOLDINGS: W. E. L. Apply to the Secretary of the Board of Agriculture, 4, Whitehall Place, London, S.W.

SYCAMORE TREES: J. T. These should be pruned in the early part of the year. If any of the branches to be removed are very large and heavy, a cut should be made on the under side of each one previous to being cut from above. The reason for this extra care is to prevent the falling branches tearing the bark off the portion left. All cuts should be made clean and as near to the old wood as possible; immediately afterwards dress with coal-tar, to prevent bleeding. This dressing will also keep rain and drip out, and act as a protection against fungoid diseases.

TOMATOS: *Gorseland*. The Tomatos are in no way diseased, but appear to show only accidental variations in colour.

COMMUNICATIONS RECEIVED.—T. H.—W. H.—Jno. A.—W. H. C.—A. H. H.—R. L. C.—Constant Reader.—J. C.—E. C.—C. L. L.—S. E. A.—C. G. P.—J. K.—E. B.—E. M.—L. F.—W. S. and S.—W. P. B.—W. B.—W. D. and S.—C. B.—E. C. P. G.—R. W. A.—B. H.—G. B.—R. P.—J. E.—C. B. C.—J. E.—J. W.—E. P. W.—J. W.—H. W.—J. C.—W. E. B.—E. B. M.—G. B. M.—W.—H. S.—Dr. R.—J. D.—H. M. V.

For Market Reports see page x.



THE

Gardeners' Chronicle

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HYBRID JAVANESE RHODODENDRONS.

THIS beautiful section of the genus *Rhododendron* has at one time or another had various names applied to it. The different varieties are sometimes classed as greenhouse *Rhododendrons*, at others as tube-flowered, while they are also occasionally referred to as perpetual-flowering. This last title is a fairly descriptive one, as the members of this group will bloom more or less throughout the year, being in this respect totally different from the tender hybrids of the Himalayan species, which flower in the spring, then make their growth, and at the end of the summer set their buds for the following season's display.

The Javanese hybrids, on the contrary, have no set period of growth, and consequently young flowering shoots, flower-buds, and expanded blossoms may often be seen on one plant at the same time. The many varieties now in cultivation afford a remarkable instance of the hybridist's skill, for in the creation of the group as it now is, seven different species have played a part, some of them, it is true, a not very important one.

The seven species are as follow:—

R. BROOKEANUM GRACILE.—The individual flowers of this species are large, funnel-shaped, and of a pale yellow tint. It was introduced by Thomas Lobb from Borneo in 1855, when he was travelling in that region on behalf of Messrs. Jas. Veitch & Sons.

R. JASMINIFLORUM is a native of Malacca, and was introduced by Messrs. Veitch in 1849. This forms a much-branched small shrub, clothed with deep green, oval-shaped leaves, and bearing terminal umbels of long-tubed, white flowers, with pinkish anthers.

R. JAVANICUM.—A large shrub with oblong, shining leaves, 6 inches or so in length, and 2 inches wide. The individual flowers are large, in many instances more than 2 inches in diameter, and of a bright reddish-orange colour. This was first introduced by Messrs. Rollisson, of Tooting, in 1847, from the Island of Java, and it has played a more prominent part than any other species in the production of the group of hybrids.

R. LOBBII.—A loose-growing shrub, introduced from Borneo by Lobb. It has lanceolate leaves, and bears long, tubular-shaped flowers, remarkable for their extreme slenderness and curved form. The colour is a bright glossy crimson.

R. MALAYANUM.—A rather compact shrub with lanceolate leaves, and few-flowered umbels of small deep-red blossoms. It was introduced from Sumatra by Messrs. Veitch in 1854. I believe that this species has only played a part in the production of one garden form, viz., "Little Beauty."

R. MULTICOLOR.—This species is a native of Sumatra, and was introduced by Messrs. Veitch through their collector, Mr. Curtis. The typical *R. multicolor* produces yellow blossoms, and those of the variety *Curtisii*, flowers that are deep crimson. This last, under the name of *Rhododendron Curtisii*, was exhibited at a meeting of the Royal Horticultural Society on November 13, 1883, and awarded a First Class Certificate. The next year Messrs. Veitch showed the yellow-flowered form (now regarded as the typical *R. multicolor*) under the name of *R. Curtisii luteolum*, but no award was given it. Both plants, however, have proved of very great value to the hybridist.

R. TEYSMANNII.—A species with yellow flowers, not so large as those of *R. javanicum*, but somewhat of the same description. According to my notes taken at the time, it was awarded a First Class Certificate by the Royal Horticultural Society when shown by Messrs. Veitch on March 24, 1885, but it does not occur in the official list of certificated plants. Soon after that date it was taken in hand by Mr. John Heal, and has since given rise to many hybrids.

As Messrs. Veitch were so closely identified with the introduction of these different *Rhododendrons* from the islands of the Malayan Archipelago, it was to be expected that they would be first to take advantage of them for hybridising purposes. The entire race of hybrids now in cultivation may be said to have been to a great extent raised by this firm.

The first hybrid was *Princess Royal*, raised somewhere about 60 years ago, the parents

being *R. javanicum* and *R. jasminiflorum*. This variety furnishes an illustration of the puzzles that come under the notice of the hybridist, for, though the parents have orange and white flowers respectively, yet in the progeny (*Princess Royal*) the yellow tint is completely eliminated, and the flowers are in colour deep pink. Crossed again with one of its parents, the little white *R. jasminiflorum*, the variety *Princess Royal* yielded *Princess Alexandra*, an almost white flower. Singularly enough this last-mentioned plant, fertilised with the pollen of *R. javanicum*, gave us several varieties with flowers of some shade of pink. This peculiarity of dissociating one colour from another in these hybrids is exceedingly interesting.

The different varieties now in cultivation bear flowers which vary in colour from white to crimson, through all the intermediate shades of yellow, pink, orange, and scarlet.

There is also a very limited number of varieties in which the flowers instead of being single are double, and to these the name of *R. balsaminæflorum* has (for garden purposes, at least) been applied. There are four varieties—*album*, *aureum*, and *carneum*, whose colours are indicated by their respective names, and *Rajah*, whose blossoms are a kind of fawn-yellow tinged with rose. These were first distributed about 20 years ago, and at that time they attracted much attention.

METHOD OF CULTIVATION.

The culture of these *Rhododendrons* is not at all exacting, provided a few simple facts are borne in mind. In the first place, they are often termed greenhouse *Rhododendrons*; this is apt to be misleading, for the word greenhouse is used in an indiscriminate manner, being applied equally to a structure from which frost is only just excluded in the winter, or to a house in which the atmospheric temperature seldom falls below 50°. As might be supposed in the case of plants that have originated from the various species which occur on the islands of South-Eastern Asia, this last-named temperature suits them best, and under such conditions they will flower more or less throughout the winter. In summer no artificial heat will be necessary, but shading from the direct rays of the sun is beneficial. The method generally followed for the propagation of these *Rhododendrons* is by cuttings of the half-ripened shoots, which make roots without difficulty. The best time of the year to carry out this operation is in the spring or early summer, as the young plants have then ample time to become established before winter sets in. As the plants grow at all seasons, it will, at least in some cases, be necessary to take the cuttings when they are ready—that is to say, as soon as the shoots of the current season are in a half-ripened state.

If the shoots do not exceed 5 inches in length, they form the best cuttings when taken in their entirety, as the somewhat swollen base just where the new shoot starts from the old wood is capable of developing root more readily than from any other part. In some cases it may be necessary to remove the bottom leaf, or

even two leaves, for the purpose of inserting the cutting, but none should be taken off that can be retained. Clean well-drained pots, from 4 to 5 inches in diameter, should be used, and they should be filled with a mixture of peat and silver sand in equal proportions. The soil must be pressed down very firmly, and the cutting inserted securely therein. From four to six cuttings around the edge of the pot is, as a rule, a very convenient number. When finished, a good watering through a fine rose must be given sufficient to settle everything in its place. A close propagating case in an atmosphere somewhat warmer than that in which they have grown is very suitable for the cuttings. If carefully attended to in the matter of shading, watering the cuttings when necessary, and admitting a little air occasionally if there is an excess of moisture, rooting will take place in about a couple of months. When rooted, they may be potted singly into small pots, effective

selected for use in potting must be of a good fibrous nature, and a liberal sprinkling of sand will be necessary. Some of the original species from whence these hybrids have originated are frequently epiphytes in a state of nature, so that their rooting powers are not very vigorous. Consequently over-potting must be strictly guarded against, while effective drainage is very necessary. A selection of varieties is not an easy matter, as there are so many good ones, and individual tastes vary considerably.

The following sorts, however, can be highly recommended:—Aphrodite, blush pink; Baroness Henry Schröder, pale rose; Brilliant, scarlet; Cloth of Gold, bright golden yellow; Jasminiflorum carminatum, carmine; King Edward VII., rich yellow; Latona, cream yellow; Little Beauty, crimson; Luteum roseum, a curious mixture of pale yellow and rose; Mrs. Heal, pure white; Ne Plus Ultra, crimson-scarlet; Neptune,

hibits certain affinities with Aroids, and, to less extent, with the Palms.

The inflorescence is borne at the end of a stalk, and is ensheathed in imbricated spathe leaves. Within these the flowers are densely aggregated on the spadix, and they are unisexual. Each female flower is surrounded by four staminate ones, and the regularity of their distribution almost gives the effect of a geometrical design. The female flowers each contain four long barren stamens or staminodes, which are shown in the figure, and constitute the curly mass lying in front of the drooping spathe.

Carludovica palmata is a handsome plant of Palm-like habit, somewhat recalling, perhaps, that of *Livistonia*. The leaves are, however, divided here and there down to the base of the blade. The plant is of some economic importance as the source of the true Panama hats. The "straw" is obtained by taking the leaves whilst still unexpanded and cutting off the strong ribs. Thus the remainder falls into thin strips which, after further treatment, are then used for plaiting.

Carludovica Drudei is another handsome species. The plant and its inflorescence were both figured in the *Gardeners' Chronicle*, vol. viii. (1877), figs. 136 and 139.



FIG. 128.—INFLORESCENCE OF *CARLUDOVICA PALMATA* WITH THE BARREN STAMENS FALLING AWAY.

drainage and a compost made up of two-thirds peat to one-third sand being in this stage very suitable for them. In their younger stages, the temperature of an intermediate house will encourage growth. A liberal amount of atmospheric moisture is very helpful, hence in bright weather they may with advantage be syringed two or three times each day. Insect pests give but little trouble to these plants, for, though aphides occasionally put in an appearance, they can be easily destroyed by vaporising. Thrips only thrive if the atmosphere is too dry, while mealy bug may possibly make its appearance, but can be easily destroyed by touching with a small brush dipped in methylated spirit. This of course cannot be used where bug has taken possession of a structure, but where only a few individuals exist it is a valuable and safe insecticide.

As the plants become larger, the peat

brilliant scarlet; President, buff-yellow, tinged rose; Ruby, bright ruby-red; Souvenir de J. H. Mangles, orange, suffused with pink; and Triumphans, crimson-scarlet. To these may be added the double forms already mentioned.

As a proof of the continuous flowering qualities of these *Rhododendrons*, it may be noted that a few years since Messrs. Veitch made an exhibit of cut blooms at every meeting of the Royal Horticultural Society throughout the entire year. W.

CARLUDOVICA PALMATA.

CARLUDOVICA PALMATA, the inflorescence of which is shown in fig. 128, belongs to the small but interesting order of *Cyclanthaceæ*. It is confined to tropical America, and includes species of varied habit, some forming upright Palm-like plants, whilst others are climbers. The order is somewhat isolated, though it ex-

FORESTRY.

SYLVICULTURE IN THE CHILTERN HUNDREDS.

IN this part of Buckinghamshire there are, as is well known, extensive forests of Beech that have succeeded each other for a very long period and created an industry in the making of chairs, brush backs, and many other articles for which Beech is suitable.

What I wish to draw attention to here, however, is the quality of the timber from a sylvicultural point of view. Nowhere in Britain, I believe, are there whole crops of trees with trunks of such fine shape and quality, and it appears strange that in the search for forestry teaching areas the Beech forests of Bucks have never been thought of. Not that the cultural system has been either intentional or systematic, for the woods are semi-natural, as far as the Beech is concerned, but the trees are there, near at hand, and show in a way that no one can misunderstand the effects of different degrees of density on the shape and quality of the trunks of trees of all kinds. The pity is that the Beech scale, or bug, threatens to destroy, sooner or later, the Beech forests.

It is well known that the Beech is an unmanageable tree in a mixed wood, owing to its shade-bearing power and wide-spreading, dominant habit; but, when crowded judiciously, it not only alters its own habit, but that of every other species that will grow with it.

I know the Buckinghamshire woods well, but it is in the Beech woods where sylvicultural lessons are to be learned. The Beech crops are probably the densest in Britain, and, consequently, amongst the most profitable, not because the timber commands a big price, but because, in the best woods, there are more sticks to the acre than are found elsewhere, and that the sticks are tall, straight, and clean. From 6d. to 10d. per foot is got for thick limbs in the wood, and from 1s. 2d. to 1s. 6d. for butts, and when the crop is regular and dense, these prices mean an annual rental exceeding the average almost everywhere else in this country. These Beech woods have, to a large extent, grown up naturally and taken care of themselves. Hence they are more like natural forests and the timber is of the right shape. It is a pretty severe commentary on British forestry that you rarely find much timber of the right shape and length except where the forests have been left to nature more or less, like the Scots Firs in some of the few yet remaining fragments of Pine forests in the Highlands, and which correspond to the Beech woods of Buckinghamshire.

There are still foresters who will shake their heads if you tell them that almost any kind of timber tree can be grown to its full height and yet have a stem nearly as thick at the top as at the bottom. I have shown a true portrait, in the *New Forestry*, of an Oak about 50 feet high of this description, but the model trees to be seen in the Chiltern Hundreds, in the neighbourhood of High Wycombe, beat all the example

I have seen elsewhere in England, and they consist of Beech, Oak, Ash, Fir, Sycamore, and Larch. The last four are few by comparison with the Beech, which constitutes the crop, but they are mixed with it. They have come from seed apparently, and have been *pulled up* by the Beech in height and growth, and are perhaps amongst the finest examples of length of trunk and uniform girth to be seen anywhere quite equal to anything I ever saw in Germany or France. Both the Oak and Ash are much addicted to throwing out side branches in a wood wherever a ray of light strikes through, but the trees referred to range from about 50 to 70 feet in height of trunk and are cylindrical and sound throughout. For such trees timber merchants will go a long way, and the only causes which are likely to deter them from buying are the distance from a station and the railway rate, which fix the limit for buyer and vendor alike. Great quantities of the best timber in this country are so handicapped in that way that they cannot be disposed of to any advantage. I know, at the present time, estates where a quarter of a million or more cubic feet would be sold right off, and a good sum invested in replanting and improvements, if it was not for the cost of haulage and delivery, which prevents a sale.

But it is the shape and quality of the trees under the conditions named that are interesting to the forester. In Sussex and Surrey there are Beeches in the mixed woods, where each monopolises space sufficient to hold a dozen properly-grown trees, but they are almost worthless because their butts are so short and tops so rough.

The great objection to pure Beech woods in this country is that they do not hold game. When dense enough to produce clean timber, they are naked underneath. All underwood disappears, and they are cold in winter.

One is not inclined to disparage scientific knowledge of forestry, but it is certainly not difficult to grow timber trees straight, tall, and cylindrical in shape, in any soil or situation.

Given an owner who knows what trees have grown, and will grow, on his estate, his forestry system might be reduced to planting about half-a-dozen species, planting thickly, leaving plantations unthinned for from 20 to 45 years, according to the species, and keeping out rabbits for the first few years. In this country I would put the last item first in the science and practice of forestry, for, next to over-thinning, it has been responsible for more failures than all other causes. *J. Simpson, Studfold.*

NOTES FROM SUNNYMEAD, DUMFRIES.

YUCCA × SANDERIANA.

THIS handsome Yucca came very late into flower, the first blooms not opening until September, shortly after the severe frost that occurred here on September 4. The frequent slight frosts we have had since then have injured it somewhat, but it is a bold and handsome Yucca, producing a good spike of its creamy-white flowers, and in an earlier season it will probably be even finer than this year. It is one of the numerous hybrids raised by Mr. Charles Sprenger, Vomero, Naples; its parentage is *Y. filamentosa* major × *Y. gloriosa* glauca pendula, and I think it is one of the boldest in the character of its foliage, this being broad, long, and ornamental. I have had it for three or four years, but this is the first time that it has flowered.

COLCHICUM BORNMUELLERI.

In my collection of Colchicums I have none so much admired as this one, which is but little seen in gardens. It is one of the largest of all, and its flowers are conspicuous among the majority of the genus by the very large white zone and the soft colouring of the whole flower. The zone covers almost half of the flower, the upper portion of the segments being of a hue difficult to describe, but one might be dis-

posed at one time to call it a soft rose-purple and at another a rose-lilac. It is a free grower, and from my original corm, purchased about the time of its first introduction to commerce, I have a nice clump, now giving upwards of 30 flowers at once. Since September came to a close the weather has been most unsettled, and the clump has been covered with a handlight, which has preserved the blooms much longer in beauty.

COLCHICUM SPECIOSUM RUBRUM SPLENDENS.

I have several forms of the noble Colchicum speciosum, but among these is one which came to this district originally from the garden of the late Mr. John Wood, of Kirkstall, and ought to bear the above name, so fine is its colouring. It is, possibly, not quite so large as *C. speciosum* maximum, but it is much finer in its colour than that variety, or than *C. speciosum* rubrum. The flowers are an intense ruby-purple, and are quite unrivalled in their own particular tone among hardy bulbous plants.

CROCUS PULCHELLUS.

Less brilliant in colouring than *C. speciosus*, the smaller *C. pulchellus*, from the north-west of Asia, is a very beautiful little autumn-flowering species, whose soft, pearl-blue flowers are most delightful in their delicate tinting and with their neat pencilling.

GENISTA MANTICA (SYN. CORNIOLEA MANTICA).

This is proving one of the most valuable of all the Brooms, as it has been in bloom for several months, and its bright yellow flowers on their graceful arching stems give one much satisfaction. As yet it seems but little cultivated in the ordinary garden, but it is sure to make its way among those who care for good and free-flowering shrubs of moderate growth. One of my plants in a very exposed position was severely cut last winter, but it has quite recovered and has again bloomed well. *S. Arnott.*

RUBBER CULTIVATION IN THE STRAITS SETTLEMENTS.

THE attention that has been given of late years to the discovery of new sources of Rubber, and the extended cultivation of well-known Rubber-yielding plants in almost every part of the British Empire is an indication, if such were needed, of the vast importance of the future of the Rubber supply to the commerce of the world. Though it is scarcely possible to take up any report or bulletin of a tropical garden or botanical station without finding some reference to Rubber plants, in the Straits Settlement this is specially evident, for in recent issues of the *Agricultural Bulletin of the Straits and Federated Malay States*, edited by Mr. H. N. Ridley, the consideration of the Rubber question has occupied a very large proportion of the space. In the course of a review of some notes on the African Rubber vines, Mr. Ridley refers to the fact that though the natives of the Cameroons had been taught how to collect the Rubber without destroying the plants, they paid no attention to the warning, and in three years all the vines in the mountains had been destroyed. On the prospect of the early extinction of the plants by this wanton cutting down, Mr. Ridley says:

"Exactly the same thing would happen to the *Euphorbia* as has happened to *Rattans* in many places that are populated districts. The *Rattans* being constantly cut before trains have practically disappeared."

This reminds one of the fate that befel the true Gutta-percha trees when their properties were first discovered at Singapore, the trees being cut down in such large numbers that they were practically exterminated in five years. It is, however, satisfactory to know that by careful cultivation of the plant there is every probability of its again becoming common.

With reference to the cultivation of Willughbeia in Java, the opinion of M. Seembruggen, a

Dutch planter, that Rubber trees can only be cultivated by people who can afford to wait many years while Rubber vines can be more quickly grown, is met by Mr. Ridley with the remark that "our experience in the Straits is that Rubber vines are much slower to give a return than Rubber trees. Willughbeia firma is very slow in fruiting. Bushes of it, which have been growing in the Botanic Gardens at Singapore for about 20 years, have flowered regularly, but only once or twice produced one or two fruits." In summing up the matter, Mr. Ridley says:

"I recently saw in Malacca a very small plantation on extremely bad soil belonging to a Chinese man who had some vines and, borrowed enough money to plant a few trees of Para Rubber, he planted, too, some Willughbeias. From the latter, now grown into fairly large clumps, he obtained nothing, nor was there any likelihood of his ever getting any Rubber from them. From the Para Rubber he was making a good profit. It might be possible to cultivate Rubber vines profitably, but at present it seems very improbable. Their habit of producing numerous small stems from which it is difficult to get any Rubber at all, and their very slow growth militate considerably against their ever playing an important part in the production of the world's Rubber supply after the easily accessible forests in which they occur have been exploited."

Besides the productive character of Rubber trees as compared with vines, the remarkable vitality of a Para tree eight years old in a Johore plantation is recorded. The tree in question is stated to have a girth of 12 inches, at 3 feet from the base. It has been tapped on two sides. Four years ago it was completely ringed 4 inches from the base, and the wood cut into all round to the depth of 1½ inches. With a moderate push it would break off. The thin bit of wood which connects the main trunk with the base is rotten and black in colour, and there is not a hair's breadth of bark between them. Despite all this, the tree has lived for four years, its leaves are the same colour and size as its neighbours, it looks healthy and yields latex. The last tapping of the tree was made in October, 1906, and the bark still yields a good and abundant supply of latex. When the tree was cut all round, and nearly through, it was intended to have cut it down, but for some reason the coolie ceased his work and the tree was forgotten. *J. R. J.*

ORCHID NOTES AND GLEANINGS.

EPIDENDRUM ERUBESCENS.

FEW Orchids have such a bad reputation for being unmanageable as this pretty Mexican species. It is, therefore, a great pleasure to see flowers of it sent by Mr. H. Haddon (gr. to J. J. Neale, Esq., Lynwood, Park Road, Penarth), and to record the method of treatment which brings such good results. Mr. Haddon writes as follows:—"I grow my Epidendrum erubescens on a teak wood block, suspending it near to one of the ventilators in the roof of the cool-intermediate house, and syringing it every day. It is treated in a similar manner to the *Odontoglossum Londeboroughianum*, which thrives and blooms well here, and of which I gave particulars of culture when I sent flowers last year. The Epidendrum erubescens now bears a fine spike of 14 flowers." Lindley's remark in *Folia Orchidacea*—"A magnificent plant, with large panicles of delicate rose-coloured flowers as large as a shilling"—is an excellent, brief description of the species. The plant is peculiar in growth, having stout, woody rhizomes rooting from the under side, and bearing at intervals of about 6 inches fusiform pseudo-bulbs. The flowers, which are circular in outline, have the sepals and petals ovate, the petals nearly twice as broad as the sepals. The trilobed lip has the side lobes unusually developed. The flowers, which are on pedicels over 1 inch in length, are rose-coloured, darkest on the front lobe of the lip, which has a yellow crest of three elevated lines.

NURSERY NOTES.

THE CHILWELL NURSERIES, LOWDHAM.

MESSRS. J. R. PEARSON & SONS removed to Lowdham, Nottinghamshire, some 12 years or so ago from the Chilwell Nurseries, near Nottingham. The extent of the present nursery is about 100 acres, the greater part of which is devoted to fruit-tree culture. The land is undulating, and portions of it slope towards the south and north. The soil is a somewhat heavy loam or keuper marl, and contains little or no lime. Although the present season cannot be considered one of the best for fruit-tree growth, the trees at the Chilwell Nurseries have made short-jointed sturdy shoots. During a recent visit note was made of a large quarter of dwarf Apples growing on the Paradise stock and bearing heavy crops of fruit; these were the "stock" trees from which all the buds and grafts are obtained. Similar provision is made for Pears, Peaches, Nectarines, &c. The trees throughout are remarkable for their cleanliness. The crops this season upon the young trees were not so heavy as usual. Some of the ornamental Crabs, however, were loaded with fruit. Why are not more of these effective trees cultivated?

TRAINED TREES.

A feature in the Chilwell Nurseries is the admirable way in which the trees are trained. This is apparent from the very first start in training until the saleable tree is fit to send out. It is a good sign when only a few trees in each quarter are left over from the previous year. This was noticeable in many instances. Not that trees are all sold off at a certain age by any means, for there are abundant examples of finely-developed specimens available for those who desire to gain time by planting larger trees. It has come under the notice of the writer that these larger trees whilst still in the nursery are at times neglected, so to speak; not so, however, in this nursery. They stand as prominent examples of skilful training, and recommend themselves by their very appearance. Messrs. Pearson have worked up a large stock of horizontally-trained trees. Horizontally-trained Pears and Apples may be seen more often, but large numbers of Plums and of Cherries trained in this manner constitute an uncommon feature. The writer advocated years ago that Cherries should be trained in this fashion rather than in the fan method, and when the trees are better known they will assuredly become popular. Cherry trees for cultivation against walls are much more valuable when trained horizontally than as fans. All who have had experience with young trees know what difficulty there sometimes arises in regulating the flow of sap, and the consequent equalisation of wood growth in Cherries. Given a well-trained tree of the horizontal form, it becomes much easier to manage, and a wall can be covered with greater certainty and more expeditiously. The same remarks apply to Plums of any kind, where grown against walls. For amateurs it is far and away the easiest system of training that can be adopted. Trees of Cherries, Plums, Apricots, Pears, and Apples fit for walls of 8 to 10 feet in height were noted in large numbers, and in the best and choicest kinds. It does not follow that no other plan of training is adopted in these nurseries, for there are large numbers of fan-trained trees as good as one could wish to see. Cordons, too, with one, two, or four stems, are numerous, the latter being commonly known as the Palmette form. Those who have had experience in selecting trained trees in nurseries where the old-fashioned system of training in any and every direction is practised know how difficult it is to inspect the stock when one tree is interwoven with its neighbours by the crossing of the branches. The difficulty does not end here, but extends to the lifting, as it has also previously affected the training itself, taking

longer to affix the stakes and to do the tying also. At Lowdham this is avoided by keeping all the training straight with the lines of the

during the growing season and to attend to all of their requirements. It may be that not quite so many trees are grown upon a given plot of



FIG. 129.—TSCHIHACHEWIA ISATIDEA, A HARDY ROCK-PLANT: COLOUR OF FLOWERS, ROSE.

trees as they are planted, so many sticks to every tree throughout, all in order, and as straight as possible. Thus it is easier to inspect the trees

ground, but the convenience of working, and, what is of even greater importance, the circulation of air between them, compensates for this.

As already stated, all the trees of whatever kind are planted at 3 feet apart between the rows, and usually as near as possible from east to west. Another feature of the nursery is that all the land is divided into quarter-acre plots, which are nearly square. Prior to planting the stocks the land oftentimes lays fallow, or nearly so, for one season. By this method a thorough system of deep cultivation is followed, and the land is got into good tilth. A persistent use of the hoe is adopted after planting, resulting not only in aerating the soil and retaining the moisture, but also in keeping down the weeds.

Standard trees are evidently still in great request; in one quarter were 16,000 crab stocks budded at the base, the stem of the standard afterwards being formed of the scion itself. This is a commendable plan. In another plot or plots were 20,000 Paradise stocks, as true and even as possible. Noting the immense number of trained trees, the question was asked as to how many there were under training; the reply was given that there were nearly 70,000, and of standard Apples now fit for moving some 16,000 trees.

Of bush fruits there are large quantities of palmette-trained Gooseberries. These are grown two to the yard, but still at 3 feet between the rows, and the plants are well furnished with shoots to the base.

expected will prove valuable. These are raised from cuttings and from seed, being budded, not upon the lateral shoots, as in the case of the Dog Rose, but upon the main stem itself. Thus the growth of both stock and scion will proceed together. *Vitis*.

*TCHIHATCHEWIA ISATIDEA, BOIS.

This species is a very singular-looking Crucifer, that at the first sight might be easily mistaken for a member of the Boraginæ. The drawing reproduced at fig. 129 was prepared by Mr. Worthington Smith from specimens exhibited by Viscountess Emlyn, Frensham Hall, Haslemere, at the Royal Horticultural Society's meeting held on April 20 last. The specimens were some of the finest that have been seen, and the Floral Committee emphasised this fact by awarding a Cultural Commendation. On the afternoon of the same day the Scientific Committee awarded the plant a Botanical Certificate.

T. isatidea was discovered by the late Count Paul de Tchihatchef in Asia Minor, at an elevation of 5,000 to 6,000 feet, on the mountains near the town of Erzincan, in the Pachalik of Erzeroum, that is at the sources of the Euphrates.

Sir Joseph Hooker, in the *Botanical Magazine*,

terminal corymbs 4 inches in diameter, each bloom being about the size of the common *Hesperis* (Rocket). The flowers are rose-red in colour, and distinctly fragrant. *T. isatidea* is a very interesting, perfectly hardy rock-plant, and should be cultivated in a position exposed to the sunshine. The late Dr. Maxwell T. Masters, writing of the species in these pages on August 10, 1895, gave the following information in respect to the best way of pronouncing the generic name, which, although obtained from the surname of a Russian nobleman, and, therefore, perfectly understood in that country, is, nevertheless, almost an impossibility to Englishmen. "In order to gain information as to the proper pronunciation of the Russian name we applied to a Russian friend, from whose instructions we arrived at 'Tche-hatch-off,' with a strong stress on the second syllable, as the nearest approach of which we are capable. The name was Latinised for botanical purposes as 'Tchihatchewia.'"

NOTICES OF BOOKS.

ITALIAN GARDENS.*

FOR some few years past there would seem to be a growing interest on the part of English readers in all that concerns the art of Italian gardening. Several beautiful books have appeared on the subject that appeal to the book-lover by virtue of the excellence that printer, author, and illustrator have bestowed upon them.

Italian Gardens is a handsome book, royal 4to in size, consisting of 157 pages of beautifully-printed text, set off to great advantage by a liberal width of margin. It is illustrated by 52 full-paged plates in colour, after original drawings by the author, and these portray in a variety of ways the many interesting and picturesque features of some of the most famous Italian villa gardens. Mr. Elgood's experience of Italy dates back to 1881, when he paid his first visit to that country, and when he commenced the series of drawings which he has since continued without a break to the present time.

The contents include, among other things, short, explanatory chapters on the various villas represented. In some cases several views of the same place are given, but from different stand-points. Among historic villas treated in this way we may mention Villa Borghese, Villa Medici, Villa Falconieri, Villa Lante, Boboli Gardens, Villa Palmieri, &c. The general plan of the work is divided into groups under the following headings, viz.: "Pompeii," "Roman Villas," "Villas at Frascati and Viterbo," "Florentine Villas," "Other Tuscan Villas," "Villas of Northern Italy." Although in each chapter Mr. Elgood gives some historical details of the place under consideration, in addition to particulars of the gardens, and has been assisted, in a measure, by reference to various ancient authorities, whose works are referred to at the end, yet there is not a general history of the garden art as practised in Italy. Particulars of this kind are easily accessible to the English reader by reference to the *Art of Garden Design in Italy*, by H. Inigo Triggs, another handsome volume, issued by the same publishers not long ago, and noticed in these columns at the time of its publication.

Of the views themselves, a few words may be acceptable to those readers of the *Gardeners' Chronicle* who have enjoyed the pleasure of a visit to some of the famous gardens of Italy, as it was the privilege of the writer of these notes only a few years ago. Early summer was the period chosen for the visit, when the flowers of spring were gradually making way for those of



FIG. 130. -TCHIHATCHEWIA ISATIDEA AS IT FLOWERED IN CAMBRIDGE BOTANIC GARDEN.

Upon enquiry as to the varieties of each kind of fruit most in request, Mr. Pearson stated that the following should be noted:—Of *Apples*: Newton Wonder, Lane's Prince Albert, Bismarck, Cox's Orange Pippin, Pott's Seedling, Allington Pippin, Bramley's Seedling, James Grieve, Warner's King, Lord Grosvenor, Mr. Gladstone, and Stirling Castle. Of *Pears*: Beurré Diel, Beurré Superfin, Williams' Bon Chrétien, Doyenné du Comice, Durondeau, Glou Morceau, Le Lectier, Louise Bonne de Jersey, Pitmaston Duchess, Souvenir du Congrès, and Thompson's Marie Louise. *Plums*: Czar, Early Prolific, Early Transparent Gage, Jefferson, Kirke's Monarch, and Victoria. *Peaches*: Barrington, Dymond, Bellegarde, Royal George, Stirling Castle, Waterloo. *Nectarines*: Early Rivers, Humboldt, Lord Napier, Rivers' Orange, Violette Hâtive, and Elruge. *Cherries*: Early Rivers, Bigarreau, Napoleon, Frogmore Early Bigarreau, Black Tartarian, Bigarreau Jaboulay, and Morello.

ROSES

are cultivated in large numbers, the soil suiting them admirably. Experiments are now being made with a stock for stands, which it is

tab. 7,608, states that the seed-pod is two-celled, and these are separated by a membranous septum, one of them containing a perfect seed, the other an arrested ovule. Boissier, therefore, was in error in stating in the original description that the pod is one-celled and two-seeded. The genus differs from *Peltaria* L. in the two-celled ovary.

The plant was introduced into cultivation by Mr. Max Leitchlin, of Baden-Baden. In 1895 it flowered in the Botanic Garden at Cambridge (see fig. 130), and in Mr. Wilson's garden (now R.H.S.) at Wisley. In 1896 seeds were received at Kew from the Imperial Botanical Gardens, St. Petersburg, and the figure already alluded to in the *Botanical Magazine* was prepared from specimens which flowered at Kew in May, 1898. The plant is a dwarf-growing perennial, 6 to 10 inches high, of tufted habit, with a stout top-root, sessile runcinate leaves, covered with stiff, white hairs. The flowers are numerous, in close

* *Tchihatchewia isatidea*.—Boissier, *Flor. Orient.*, I., 310; Micheli, in *Revue Horticole*, August 1, 1895, p. 351, figs. 116, 117; Baillon, *Hist. des Plantes*, vol. III., 1872, p. 261; Prantl, in *Engler u. Prantl. Die Natürlichen Pflanzenfamilien*, III., Theil, 2 Abtheilung, p. 206 (1891); Sir Joseph Dalton Hooker in *Botanical Magazine*, tab. 7,608 (1896).

* *Italian Gardens*, after drawings by George S. Elgood, R.I., with notes by the artist. Longmans, Green & Co., London.

the summer, and when the intense heat had not set in. So we notice in some of Mr. Elgood's pictures indications of his presence there at the same interesting season.

In garden architecture, exemplified by balustrade and fountains, we have several examples from the Villa Borghese, the forecourt, the aviary, and the seahorse fountain—three distinctive pictures. The Villa Medici depicts a quiet corner, with garden seats in stone, and a few flowers at intervals. The Parterre, Villa Colonna, is a very attractive garden view, with pond and fountain-flower beds in the distance, and huge pots on stands, containing Lemon trees in fruit. Terminal Statues, Villa Piatti, is typically Italian, flower pots standing about here and there. The Bay Walk at the same place is a pretty view, as also is Villa Lancelotti. Many of the views can hardly be called garden views; they are, of course, taken from gardens, but are largely stone fountains, terraces, steps, and balustrades, and of this a conspicuous example is the great fountain at the Villa Conti. A contrast to this is found in the Villa Lante, a pretty flower garden; within clipped borders, that is quite bright when compared with some of the others. A nice bit of colour, furnished by pots standing about on the ground, is found in the picture of the Boboli Gardens, and again in Florence, from the Villa Palmieri. Villa Reale di Castello is probably, from an English point of view, the picture that most nearly comes near the designation of a flower garden. A Florentine Terrace displays a wealth of colour, supplied by plants in pots, that is not furnished by any of the others. The Garden Gate, Villa di Caniparola, is also a delightful little view of flower-beds at the foot of a flight of steps leading to a gateway.

We must conclude this notice with the briefest mention of a few remaining pictures that will arrest the attention of the reader. In the Parterre, Villa Garzoni, the great stairway at the same place; Wistaria, Villa Cavagnaro; the Lower Terrace, Villa Imperiali; a Stairway, Villa Arson, there is much artistic effect. The book is an interesting, highly artistic addition to the literature of Italian gardens. It forms a companion volume to a book illustrated by the same artist, and which we also noticed at the time of publication, called *Some English Gardens*.

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Sobralias.—These plants are now developing young growths, and they will soon make many large roots, which should be afforded a substantial compost into which they may extend. If it is necessary to re-pot or divide large specimens, the present is a favourable time for doing the work, as the plants will soon become re-established. All pot-bound plants should be afforded a liberal shift, and they may then be left for several seasons without being again disturbed. Fill the pots to one-third of their depth with clean crocks, and employ for the rooting medium fibrous loam and sandy peat in equal parts, with a small quantity of sphagnum-moss and sufficient small crocks to keep it porous. In potting keep the base of the plant and the surface of the soil below the rim of the pot, so as to make watering easy, as when in full growth *Sobralias* need to be plentifully supplied with water. The potting material should be made very firm about the roots. After this operation has been carried out, carefully tie out the young growths, so that they will be clear of each other, and that light and air may pass freely between them. The centre stage in the intermediate house will afford a suitable position for them.

Acrostichas.—In the same house plants of *Miltonia* and *Acrostichas* are now growing freely; examine

the young growths several times each week, and when the young leaves are found sticking to each other, carefully separate them. It will also be noticed that at the base of the young growths there is sometimes a yellowish outer sheath, which should be carefully slit in several places and pulled off in small pieces; by the removal of this sheath the roots will be the better able to penetrate into the soil, instead of pushing upwards into the air. Sometimes the young leaves of this plant turn black at their points, which is an indication that it is being subjected to too much warmth, or that insufficient ventilation is provided. *Miltonia* (occasionally catalogued as *Odontoglossum*) *Phalænopsis* has been a rare plant for some time past, but fortunately newly-imported plants are now being distributed, which, on being placed in the growers' hands, should at first be potted into pots filled with clean crocks, affording them water every day until root action commences, when they may be re-potted in an ordinary Orchid compost. Afterwards suspend or elevate them well up to the roof glass of the Cattleya or Mexican house, and keep them well supplied with water at all seasons.

Odontoglossum coronarium is also being imported at the present time, and many growers may attempt its cultivation for the first time. On receipt of the newly-imported pieces, I have generally found the best plan is to obtain a flat teak-wood raft, which should be thinly covered with sphagnum-moss. Firmly fix the plant to this, either with copper wire or stout tar string. Suspend the plant horizontally from the roof of the cool house, and lightly spray the under side of the raft with water whenever the moss appears dry. Avoid wetting the rhizome too much for a few weeks, as the pseudo-bulbs are liable to decay from this cause. Immediately root action has commenced, the plant may be removed from the raft and placed in a long, narrow teak-wood basket, which should be made rather shallow. Cover the bottom of the basket with large flat crocks, over which place a layer of smaller ones; then make a firm bed of the compost, which should consist of lumpy peat and sphagnum-moss in equal parts. Lay the plant upon this, and fill up firmly to its rhizome with about 1 inch deep of freshly-gathered sphagnum-moss. Suspend the plant at the warmest end of the cool house in a position well exposed to the light. Careful watering is necessary for a time following this operation, but when the plants are growing and rooting freely moisture should be plentifully afforded.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq., Norwood, Alloa, Clackmannanshire.

The early Peach and Nectarine house.—The trees, provided the new wood is well matured, should now be pruned, cleansed, and trained. Before the trees are seen to, it is advisable to thoroughly cleanse all parts of the woodwork of the house with soft soap and hot water, also to perform any painting that may be necessary, and to lime-wash the walls. Unfasten the tree from the trellis, cut out all immature, useless shoots, and wash the whole of the tree thoroughly with Gishurst Compound, using 1 ounce of the specific to 1 gallon of water. Apply the wash with a soft brush, which should be drawn towards the ends of the shoots to avoid injuring the buds. When washed, the trees can be fastened neatly again to the trellis, after which the borders should receive attention. Remove 2 or 3 inches of the surface soil, and apply a fresh dressing of rich loam, mixing a 6-inch potful of fine-grade vine manure to each barrow load of the new soil. Next apply a mulch of light stable manure, or, if procurable, Moss litter manure from a stable, which is the best material for mulching generally. Mulch also the outside border.

Figs in pots intended to produce an early supply of fruits will have shed their foliage, and may be pruned at this date. If the growths have been properly pinched throughout the growing season, very little superfluous wood will be present. Turn the plants out of their pots, examine the drainage, and shift into larger pots any plants requiring a greater root run—always remembering, however, that the best results are obtained in small pots, provided the roots are

not cramped, are well supplied with water during the growing season, and are fed with suitable manurial stimulants when actively growing and fruiting. Top-dress any plants not requiring a shift with turfy loam, and keep all the plants as cool as possible in a cold pit or orchard-house until they are required for forcing.

Fig-trees in borders which have shed their leaves should now be unfastened from the trellis, in order that the house may be thoroughly cleansed, and the necessary training be performed. Old, worn-out branches should be entirely removed, and all other necessary pruning be done. Wash the shoots thoroughly, and afterwards dress them with Gishurst Compound. Fig trees are very liable to attacks of red spider. They may, therefore, require to be dressed twice with the insecticide; but take care that the compound is not sufficiently strong to harm the fruits of the first crop. Fasten the shoots again to the trellis, then remove 2 or 3 inches of the surface soil down to the roots; apply a fresh dressing of good turfy loam, and mulch with horse manure. The trees will then be in readiness for forcing to furnish a succession to the pot Figs.

Strawberries in pots.—No time should be lost in placing all the plants for forcing under cover. The best plan of wintering Strawberries in pots is to plunge the pots to the rims in coal ashes in cold frames. This prevents the roots from becoming frozen, and saves the pots from being broken by the frost. Give the plants an abundance of ventilation whenever possible.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to LORD CLINTON, Bickton, East Devon.

Notes on planting. In the west the month of October has been a very wet one, 6.89 inches of rain having been registered here, while in the preceding month less than $\frac{1}{4}$ of an inch fell. This will prevent any planting being done for some little time, as it is contrary to sound practice to carry out such work while the ground is in a very wet condition. Nurserymen usually begin to execute their orders early in the present month, and should any trees arrive while planting is impracticable they should be carefully unpacked and all roots examined, cutting away any bruised portions. In some instances it may be necessary to shorten considerably the more robust roots, or any that show an inclination to grow downwards, after which the trees should be placed in a slanting position against some buildings and the roots carefully covered with old hot-bed manure or leaf-soil. Of the many mistakes made in planting trees, none is greater than that of burying the roots too deeply. Four inches of soil is amply sufficient for covering the last tier, and as all roots are inclined to strike downwards, it should be the planter's object to encourage them to the surface by applying an annual top-dressing of sweet soil, in preference to that containing much manurial element. It is also advisable to have some dry soil at command (see Calendar for September 14); this may be much more easily worked down among the roots with a gentle shake of the tree than when soil from the open has to be used. All trees in the open should be securely tied to a stout stake at the time of planting, using a piece of old bag to prevent the bark being chafed, while those set out against walls or trellises require a tie here and there so that the wind will not rock them to and fro. In taking out stations for fruit trees allow ample space in each so that the root can be evenly spread out, the subsoil broken up with the fork, and a few shovelfuls of the top spit placed in the centre of the pit for the roots to rest on. Turf ought not to be placed over the roots, but the surface soil kept in a fine tilth for two or three years after planting, by frequent hoeings during the spring and summer months. It is a good plan to apply a strawy mulch over the surface of newly planted trees to prevent the frost penetrating too deeply among the roots. I do not recommend the grower to prepare the holes much in advance of planting, in case of heavy rains, which would sodden the ground and hinder rather than accelerate the work. The proper distance at which to plant the various fruit trees and bushes will form the subject of my contribution next week.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. Ford, Pencarrow, Cornwall.

Lily of the Valley.—It is a good plan to have several beds in which the plants are of different ages, so that it only becomes necessary to lift a part of the stock at one time. The crowns must not be allowed to become unduly crowded, as when this takes place the quality of the flower spikes soon deteriorates. The lifted crowns should be sorted into three sizes, reserving the finest for use in forcing purposes, and replanting the other grades in separate beds. Any surplus crowns of the smaller sizes may with advantage be planted at the margin of the woods, or in a cool part of the shrubbery. When replanting the crowns in beds, a fresh position is advisable, but if this cannot be afforded, the soil in the old bed should be worked well and have plenty of rotten dung mixed with it. In order that the flowers may be gathered conveniently, the beds should not be made more than 5 to 6 feet in width, allowing a space of about 15 inches between the beds for a footway. In dealing with a damp, cold situation, it is generally wise to raise the beds a few inches above the level of the alleys. The established beds should be cleaned over and afforded a top-dressing; for this purpose nothing is better than the cleanings from a fowl-house.

Hellebores.—The remains of the top-dressing applied to the Christmas Roses last spring on the completion of the flowering, should now be cleared away. Very lightly prick over the surface soil with a hand-fork, and make an application of guano or Clay's fertiliser. As the purity of the flowers is often marred by mud splashes, it will be well to place a spare frame over, at least, a part of the bed; this will also gently force the plants. Air should be freely admitted by day, and the lights withdrawn during fine weather. The Lent Lily section of the genus *Helleborus* may also be similarly cleared now, but the crowns will not need to be covered for a long time to come.

Herbaceous plants.—It will generally be found convenient to overhaul the mixed flower borders at this season. The work can only be performed during fine weather, and the border should be dealt with piecemeal, making good each section as the work proceeds. If the deciduous bulbous and tuberous-rooted plants were labelled or otherwise marked, as was recently advised in this Calendar, they will now run no danger of being damaged. Many of the stronger-growing subjects, such as the taller *Heleniums*, *Solidagos*, *Pyrethrum uliginosum*, and the perennial *Sunflowers*, although very beautiful in their seasons, soon assert themselves aggressively and to the detriment of their less vigorous, but not less desirable, neighbours, that it becomes necessary to lift them almost every year, and after providing fresh soil replant small pieces obtained from the outsides of the clumps. For obvious reasons, unless dealing with a rare or choice plant, the replanting should never be done with growths taken from the middle of the clump. But I must return to this subject next week.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Chrysanthemums.—The main batch being now in full beauty, every effort should be made to keep the blooms in a good condition as long as possible. Ventilate the houses with care, watching the weather in order to be able to guard against sudden heavy showers, which have been very prevalent of late. Maintain a little heat in the hot-water pipes to dispel moisture; a damp, stagnant atmosphere is most detrimental to the large blooms, causing them to damp-off and become useless. Leave the top ventilators partially open at night and maintain a minimum atmospheric temperature of 50°. When the heat of the houses rises in the morning, increase the amount of air according to outside conditions, and try to secure an equable temperature of 55°. If the floor is of such a nature that the water lies about after watering has been done, let such water be taken up by means of a mop and so make all the surfaces as dry as possible. Remove any decaying leaves as soon as they are seen, and

make everything in the house as clean and attractive as possible. As the early varieties pass out of flower, throw out all those plants not required for propagating purposes, retaining only the best for this purpose. Cut down these selected plants and place them in a frame near to the glass, that the suckers may become sturdy and robust, remembering that strong "cuttings" are in every way desirable. The latest varieties should be kept as cool as is possible without allowing frost to reach them, but when the buds begin to show colour a warmer atmosphere will tend to the better development of the blooms.

Bulbs for forcing.—As the batches of bulbs arrive from the nurseries, no time should be lost in getting them potted up, particularly any that are required to flower early in spring, as unless the bulbs have time to make plenty of roots before being introduced into heat, no amount of forcing will bring about good results. Where large conservatories have to be kept continually furnished with a succession of flowering plants, a good batch of May-flowering Tulips, if potted up, will be found of much service. These succeed in any sized pot, but if really fine specimens are wanted, place 12 to 18 bulbs in an 8-inch pot. These will make magnificent groups of colour, and the considerable length of stem make them quite suitable for this purpose. These need not be forced, but should be allowed to come on naturally outdoors, taking them inside before there is any danger of the blooms being splashed and damaged. Such plants make a gorgeous show, last well, and are very elegant and graceful for decorative work. Bulbs plunged in leaf-soil or ashes should be examined at intervals, taking out all that have started nicely and have made good roots. Place these in a frame, and shade them with a mat for a few days from sunshine till the growth becomes green, after which batches may be placed in heat as required. Tulips will succeed in greater heat than many bulbs, but *Narcissus* should not be subjected to a high temperature, or many will go blind, and any flowers they produce will be flimsy and thin.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq., Cobham Park, Surrey.

Cauliflowers.—The crop that is now "turning in" should be carefully watched, in order that a leaf or two may be laid over any where the flower is coming to exposure. This is necessary to preserve the flower from rains and frost. Severe frost would ruin any which are nearly fit to cut, and if there are many approaching such a condition it will be well to lift them and plant them again in a cold shed or other shelter that is capable of resisting the frost. After a week or two the later plants may also be lifted and laid-in by the heels in a cold frame, and they may then be expected to afford a supply of small Cauliflowers until Christmas time if the plants are sufficiently numerous.

Asparagus.—The plants have ripened rapidly during the past fortnight, a point to be desired in gardens where considerable forcing is done. The tops may, therefore, be cut off and a dressing applied to the beds. In the earliest beds the crowns should soon be in a proper condition for lifting; therefore, all available litter should be collected and reserved for the purpose of forming hot-beds. With this litter it is desirable to add tree leaves to the extent of three parts in four, mixing them well together, and placing the materials in the situation ready for placing the crowns upon as soon as the lifting commences. Crowns which are four years old are best for the purpose of forcing, but from old beds which it is intended to discard some very good results are often obtained.

Mushrooms.—Continue to make fresh beds at convenient intervals, so as to ensure a continuous supply. Whenever water is applied to the beds (which on no account should be allowed to become dry), be sure that water is used which has been heated to the same temperature as that of the atmosphere of the house.

Rhubarb.—Roots that were lifted and exposed as was advised in a previous Calendar will now be ready to be placed in the forcing quarters, and as the first batch is generally productive

of only very indifferent results, a second batch should be put in hand after a fortnight has elapsed. When a batch has been introduced to heat, take the necessary steps to lift a further lot of roots and expose them to the air to prepare them for future use, remembering that when once Rhubarb has been supplied to the kitchen it will be expected that the supply will be maintained.

General remarks.—Owing to the wet weather, it will be found impracticable to work on the soil in most places; therefore, advantage should be taken to push forward the work that has been kept in reserve for such times, as, for instance, tying and bunching-up of Onions, picking over Potato tubers, and properly storing roots that have been temporarily housed, &c. Drains may in some cases be getting blocked, and these should be thoroughly examined and cleaned. All odd jobs that have accumulated during fine weather should now be given attention. Standing crops such as Broccoli, Brussels Sprouts, &c. (if it is possible to get about them), will be greatly benefited by having all decayed leaves removed, afterwards working the hoe between the rows. The main crop, or that part of the winter supply of Potatoes that in some cases has to remain out-of-doors during the greater portion of the winter, will need to be covered and made secure from frost. Although rough and wet weather often prevents progress being made with the more important operations, it affords the opportunity to get these and other matters put into satisfactory order.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

Chrysanthemum displays in public parks.—Generally speaking, there is but little floral beauty in public parks to attract visitors after the end of October until February or March. To brighten the first portion of this dull and—to the average visitor—uninteresting period of the year, it has been customary for some time past in many of the leading parks throughout the country to make an annual display of Chrysanthemums, which, fortunately, are at their best at this season. Where such exhibitions have been inaugurated they have proved a very popular institution, being patronised by thousands of interested and appreciative visitors every year. Were it not for these displays, many people would not otherwise be induced to visit the parks during the whole of the winter. Taking everything into consideration, the trouble and expense necessarily involved in preparing for and maintaining a Chrysanthemum display during the autumn is thoroughly well repaid by the great amount of pleasure it undoubtedly affords the public. Where a parks department is fortunate enough to possess spacious conservatories, the facilities for making a successful and prolonged display are very great, and should be utilised to the fullest possible extent. Needless to say, however, very good, though more restricted, shows are produced—which are much appreciated—in less pretentious structures. It sometimes happens that the structure set aside for the Chrysanthemums is too small to permit of visitors entering it at all, and arrangements have therefore to be made to enable them to view the flowers from the outside only. Even where no suitable glass-house exists, it seems to me that, by using a good-sized skeleton frame, fitted up with canvas attached to rollers, that it would be quite possible during an average season to make a very fair show with Chrysanthemums more or less in the open. No doubt, under such circumstances, the varieties best adapted for growing would be early-flowering, robust kinds. An amateur's collection which I once saw protected in this manner was well worth seeing, and gave me the idea that where a suitable position could be found for carrying it out on an extended scale, the results would, in all probability, be satisfactory. Both exhibition and decorative plants should be grown for the foregoing purpose (whether they be shown under glass or out in a skeleton frame), as a combination of the two gives a very pleasing effect, and enables the public to see the result of the different methods of cultivation.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, NOVEMBER 11—

United Ben. and Prov. Soc. Com. meet.

TUESDAY, NOVEMBER 12—

Roy. Hort. Soc. Coms. meet. Exeter Fruit and Chrys. Sh. (2 days). Ulster Hort. Soc. Sh. at Belfast (2 days). Altrincham, Bowdon, Hale and Dist. Chrys. Sh., Hale (2 days). Devizes Chrys. Sh. Birmingham and Midland Counties Chrys. and Fruit Sh. (3 days).

WEDNESDAY, NOVEMBER 13—

Liverpool Hort. Assoc. Sh. (2 days). York Chrys. Sh. (3 days). South Shields and Northern Counties Chrys. Sh. (2 days). Bath Gardeners' Soc. Chrys. Sh. (2 days). Reading Chrys. Sh. Tonbridge Chrys. and Fruit Sh. (2 days). Brixton Chrys. Sh. Chester Paxton Chrys. and Fruit Sh. (2 days). Manchester Bot. Gardens Chrys. Sh. (3 days). Lancaster Chrys. Sh.

THURSDAY, NOVEMBER 14—

Edinburgh Chrys. Sh. (3 days). Barnsley Chrys. Sh. (2 days) (provisional). Weston-super-Mare Chrys. Sh.

FRIDAY, NOVEMBER 15—

Sheffield Chrys. Sh. (2 days). Bradford Chrys. Sh. (2 days). Bolton Chrys. Sh. (2 days). Derby Chrys. Sh. (2 days). Stockport and Dist. Chrys. Sh. (2 days).

SATURDAY, NOVEMBER 16—

Burton-on-Trent Chrys. Sh. German Gard. Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—42.4°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, November 6 (6 P.M.): Max. 54°, Min. 45°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, November 7 (10 A.M.): Bar. 30°, Temp., 50°, Weather—Overcast.

PROVINCES.—Wednesday, November 6 (6 P.M.): Max. 51°, England S.; Min. 40°, Scotland N.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—

Sale of Dutch Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY TO FRIDAY—

Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

TUESDAY—

Stove and Greenhouse Plants, Orchids, &c., at The Gardens, Tynney Hall, Rotherwick, Hants., by Protheroe & Morris, at 12.

TUESDAY AND WEDNESDAY—

Sale of Nursery Stock at the Brooms Nursery, Clifton, Brighouse, Yorks., by order of Mr. L. Kershaw, by Protheroe & Morris, at 12.

WEDNESDAY—

200,000 Fruit Trees and Bushes, &c., at Perry Hill, Cliffe, near Rochester, by order of Messrs. Horne & Sons, by Protheroe & Morris, at 11.30.

Dutch Bulbs, at 10, Roses, Plants, &c., in variety, at 5, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

THURSDAY—

Japanese Liliums, at 2. Palms, Roses, Azaleas, &c., at 5, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

FRIDAY—

20,000 Apple Trees and other Fruits, Hop Sets and Ornamental Shrubs, at Ladd's Court, Chart Sutton, near Maidstone, by Protheroe & Morris, at 11.30.

The German Society of Economic Applied Botanists was well represented at the Botanical Congress held at Dresden during September.

A resolution was passed urging upon the Government the need of making better provision in many of the technical colleges for the various branches of botanical science. It is a pity that there is not more organisation amongst the botanists and zoologists in this country who are interested in the practical applications of their science. The general public, and even many of those who should be more directly interested in the matter, do not always sufficiently realise the benefits that ought to accrue to the great industries of agriculture and horticulture by the establishment of closer relations between theory and

practice. Nevertheless, the movements that have taken place within recent years show an increasing appreciation of the true connection between the biological sciences of botany and zoology and the industrial pursuit of agriculture in the widest sense. The opening of the laboratory at Wisley, the recent foundation of a chair of botany at the University of Leeds, as well as the establishment of a similar one which, it is understood, is likely to occur shortly in another great industrial centre, are all steps in the right direction.

A society of Economic Biologists was formed in this country not very long ago, and we hope to hear a good deal more of it in the future. Comprising as it does both botanists and zoologists, it ought to prove a valuable means of organising the somewhat isolated workers in this field of research into a coherent and energetic body of investigators. It is most important for the welfare of economic biology that the two main divisions of botany and zoology should remain in close touch with each other, although of course the individual workers must naturally be compelled to specialise in different directions corresponding broadly with the distinctions between the animal and vegetable kingdoms. But so many of the problems, whether connected with disease, with breeding, or what not, are really border-line problems, that co-operation, as above indicated, becomes absolutely indispensable.

Furthermore, the newer branch of chemistry, which goes by the name of bio-chemistry because it has to deal especially with the processes that are characteristic of living matter, should likewise be pressed into the service.

Such a combination, if properly organised, will not only help to bridge over the gulf that still separates the work of the laboratory too widely from that of the field, but in achieving this it will not fail to render immense service to the country at large.

The present week witnesses the high-water mark of the **Chrysanthemums**. Chrysanthemum season, and exhibitions of the flower are being

held in most of the populated centres throughout the country. There are some instances in which the shows of former years have been abandoned owing to the lack of sufficient public support, but they are comparatively few, and they scarcely affect the overwhelming pressure upon our columns which has been general at this season for many years past. At the same time, it is alleged in support of the contention that show Chrysanthemums are less popular than formerly, that at the principal exhibitions there is noticed a falling-off in the degree of enthusiasm evinced by gardeners and their employers in the novelties displayed, and that the attendances are apt to be less numerous than was the case ten years ago. Some of our correspondents are disposed to attribute these circumstances to the fact that it is becoming a common practice to display the flowers in vases or jars instead of on boards as heretofore. They allege that the use of vases inflicts upon the exhibitor an increased amount of trouble and expense which he is unable or unwilling to bear; that it is tending to decrease the number of varieties exhibited, and, therefore, cultivators are the less eager to

purchase the novelties the raisers have to offer them each season. Having discussed these questions on a recent occasion, it is not our present purpose to dwell upon them at any great length, but there are several points which ought to be borne in mind by exhibitors and exhibition committees alike. In the first place, it may be assumed that exhibitions are not held exclusively for specialists, but inasmuch as the prize money is usually furnished by the payment of the public for admission to the show, some effort, at least, should be made to provide the best decorative effects obtainable, and further to ensure that the exhibits will be capable of affording the visitor such information and object-lessons as will be calculated to repay him for his patronage. Those who had the privilege of witnessing the imposing display arranged by Mr. Davis at the last meeting of the Royal Horticultural Society are not likely to have any further doubt as to the best method of staging the Japanese blooms. Such an effect as was afforded by that exhibit could never have been obtained from flowers arranged on boards, and we do not remember an instance in which Chrysanthemums shown exclusively by the latter method at these meetings have been judged to be worth the highest award of a Gold Medal! In respect to the number of varieties, would it not be possible for the Committee of the National Chrysanthemum Society to institute a class for sixty blooms to be shown in twenty vases, each vase to contain three blooms of a distinct variety? This would take the place of the older class for sixty blooms in twelve varieties. In order to obtain the necessary money to offer prizes of greater value to compensate for the additional expense incurred in the transit of blooms with long stems attached to them, it might be necessary to reduce the number of classes. Such a reform would enable the societies to meet this case, and, in addition, to make the fewer classes cover a greater number of varieties. If it is found that, after all, it is needful to have boards for the gratification of the specialists who, it must be remembered, have every right to be considered equally with the public, then keep them by all means, but let them remain a subordinate feature of the exhibitions.

But to turn from this aspect of the question, it is by no means established that the decline in the interest evinced for exhibition blooms is caused by any such circumstance. There are other factors that have an effect of no inconsiderable weight. During recent years the race of early-flowering Chrysanthemums has been improved by the raising of numerous varieties of greater merit, and capable of producing flowers of larger size. These flowers have been abundant in gardens and in the public markets for two months past, and it is not surprising if this fact has a prejudicial effect upon public appreciation for the still larger flowers when displayed at the November exhibitions. There is a charm in novelty that appeals to most people, and if Chrysanthemum blooms were unfortunately unattainable until the season is ripe for the exhibitions, such deprivation might be expected to greatly stimulate public enthusiasm.

Another circumstance has even a greater importance in its bearing on this question, namely, that of the degree of merit possessed



SPECIMEN FUCHSIAS, CULTIVATED AT KELSEY PARK GARDENS, BECKENHAM.
HEIGHT OF CENTRE PLANT, 10 FEET 4 INCHES.

by new varieties. The development of the exhibition Chrysanthemum is a page in the book of modern gardening, and most cultivators have watched the process in more or less degree for themselves. It is not many years ago since the advances made by the florists each season in the particular direction thought to be most desirable were by leaps and bounds. Professional cultivators and amateurs alike were in the habit of visiting the shows in the old inconvenient Aquarium at Westminster to see some startling novelties, and they were seldom disappointed. The novelties they saw there were of much greater size, or they possessed colours and forms that were quite different to those they themselves could exhibit; therefore, purchases were freely made, and the greatest enthusiasm prevailed. It was not to be expected that the process could be continued indefinitely, and, as a matter of fact, we know that it has now become a matter of the greatest difficulty for the florists to breed varieties that are greatly superior to existing sorts in the qualities of size or colour. There is reason for believing, however, that in the shades of colour further advances may be made even if the steps leading thereto are short and intermittent. Our plant-breeders should recognise that in seeking to obtain greater refinement of bloom and floret, in the raising of single-flowered types of better quality, in giving renewed attention to all the sections of the Chrysanthemum instead of exhausting their efforts upon the Japanese varieties alone, they would be working for results that are reasonably possible and most desirable. The craving for mere size has been satisfied perhaps as fully as it is possible to satisfy it.

We are not likely ever to see Japanese Chrysanthemums of much greater size than the variety Madame Carnot as it was shown half-a-dozen years or more ago! That it is deemed to be impossible to grow such flowers of Madame Carnot at the present time is a circumstance tending to illustrate what an exceedingly unnatural product the exhibition Chrysanthemum really is! No such thing as our modern Chrysanthemum was ever discovered in nature or herbaria. Similar results to those obtained in this country have doubtless been reached by the Japanese many years previously; but with them as with us they have been gained by *methods* of cultivation, not merely by ordinary cultivation, but by disbudding, selection, and other similarly restrictive processes. So unnatural is the product that, as a rule, a modern variety can only be expected to remain useful for exhibition purposes for a period of about six years. One of our foremost raisers informed us quite recently that this was the case. A variety is usually two years old from the seed before it becomes commonly seen in the exhibition stands, and after about four or six further years a Japanese variety may be expected to lose its value as an exhibition flower. This is not due to the raising of larger-flowered varieties, but the growers allege that the plant, having its constitution impaired by high cultivation, it is no longer possible to force from it such fine flowers as it previously afforded. The correct explanation is probably this: that in order to get the extreme size considered to be necessary in exhibition blooms, the culti-

vator has to resort to every device possible, and among these may be counted the practice of employing plants which possess the increased vigour usually gained after sexual propagation. The extraordinary vigour of a new variety is merely the fleeting vigour of a young seedling, which may be expected to become less in degree as the variety settles down into its normal condition, that is, the condition that it is capable of maintaining for the longest period. This normal condition is what the grower terms enfeebled constitution, an error that arises from the fact that he compares the average capabilities of the variety with those it possessed during its babyhood. Thus it is necessary to continue to raise new seedlings, and the new "Mrs. Norman Davies" or "F. W. Lever" therefore succeeds Madame Carnot, not necessarily because the flowers are larger, whiter, or of better form, but because Madame Carnot at its best is no longer possible. The history of the variety Edwin Molyneux would appear to provide an exception to this rule, but in this case it will be remembered that the variety continued in the exhibitions after the greatest size was unattainable, merely because no novelties were forthcoming that possessed the same colour.

It is satisfactory to know that whatever its prospects may be as an exhibition flower, the Chrysanthemum is never likely to lose favour in gardens. Its cultivation is inexpensive; it flowers freely and at a season when other flowers are scarce, therefore it will probably remain indefinitely a popular plant, although at one period this, and at another that, section will receive the greater attention and appreciation.

The Present Season.

The season of 1907 has not been favourable to exhibition Chrysanthemums. The sun has been so often obscured, and the atmosphere damp, that Chrysanthemums have been induced to make soft shoots, which have failed to mature and harden so perfectly as they should. This being the case, the best blooms this year should be seen at the later shows, and they are likely to be the produce of second crown or terminal buds. On the proper selection or "taking," as the term is generally used, of the buds for flowering depends to a large extent the success of the cultivator. As a rule, the grower knows that large size is more easily obtained from crown buds, especially first crown buds, and greater refinement and development of colour from terminal buds. Certain varieties are generally too small in size if allowed to go to the terminal bud, and others are much too coarse when grown from the crown bud. It will be seen that the less natural and restrictive the treatment applied, the less refinement and quality is to be expected in the flowers. If the plant were left to itself, the first crown bud would seldom or never develop; it merely serves to put a check to growth, and by this means causes lateral growths to form below, and these by their vigour eventually starve the central bud, which accordingly perishes. The terminal bud, on the contrary, would develop into a flower in any case, though in size it would not be comparable with those which are

obtained after the severest disbudding has been practised. It is these circumstances that induce cultivators, in a season like the present, to select terminal buds in all cases where the varieties may be safely treated in such a manner.

Since the Chrysanthemums have been housed, there have been many complaints of damping of the florets, a condition due in the first place to high cultivation, attended with an excessive use of stimulating manures, often persisted in longer than is necessary, and in the second place to damp climatic conditions and absence of sunshine. In the face of all difficulties, however, the National Chrysanthemum Society were able to make a good exhibition at the Crystal Palace, as will be seen from our report on another page.

OUR SUPPLEMENTARY ILLUSTRATION to the present issue will serve to remind the reader of the type of Fuchsias that was common a quarter of a century or more ago, when specimen plant-culture was encouraged at the horticultural exhibitions. Irrespective of all that might be said for and against the old type of specimen-plant, it does seem a pity that most of us are so prone to follow in the beaten track, that the prevailing fashion in flower gardening, plant-culture, or any other form of gardening appears to appeal to us with irresistible force. Gardeners, like most other men, are insufficiently original in their practices; therefore, as the pendulum swings to and fro, this or that fashion is generally followed, and the exceptions to the general rule are too small in number to afford that greater interest that variety and novelty alone can impart. The plants shown in the illustration are certainly attractive objects, and they obtained the first prize in a class for Fuchsias at the Beckenham horticultural exhibition last summer. The centre plant was 10 feet 4 inches in height, yet was only two years old from the cutting. Mr. MARK WEBSTER, gardener to E. J. PRESTON, Esq., at Kelsey Park, Beckenham, describes his method of cultivation in the following letter:—

"Fuchsias appear to us indispensable for the decoration of the conservatory and flower-gardens during summer. In August strong cuttings are taken from stools which have been cut down and planted out for that purpose. Three cuttings are inserted round the sides of a 3-inch pot containing sandy soil. They are kept in a somewhat close atmosphere, and roots soon form at the base of the cuttings. Before the roots become matted together, the plants are potted separately into pots 3½ inches in diameter, which are afterwards placed on a shelf near to the glass in an intermediate house, where the plants quickly establish themselves in the fresh soil. By the month of October they are ready for re-potting into 5-inch pots. The plants are encouraged to make slow, strong growth during the winter months, and in February they are ready for a shift into 7-inch pots. The soil used at this potting consists of loam, leaf-mould, and road grit, but is enriched by some manure from a spent hotbed. The plants are next transferred to a vinery which has just been started. When they have filled these pots with roots, a selection is made; those intended for potting on are again shifted into 9½-inch pots, adding some finely-sifted cow manure to a similar compost to that used on the previous occasion. The plants are arranged in a light position in a Peach-house in which the trees have just bloomed. They grow rapidly under the treatment accorded the Peach trees, and quickly develop into shapely, pyramidal plants by timely pinching and stopping. The plants which were allowed to bloom in the 7-inch pots having become exhausted, a selection of stools

for producing cuttings is made and planted outside in a cool situation. About July the plants in the 9½-inch pots also begin to show signs of exhaustion. Another selection has to be made before the plants are stood outside. A limited number are cut hard back to be grown on as pyramids, while the others are trimmed up as standards. Watering and an occasional stopping is all the attention they require until the fear of frost renders shelter necessary. While resting, the standards are stored in the space required by the pots, and next season they are planted out in the flower garden. The pyramids are shifted on into 14-inch pots in the month of March, when growth and roots have become active. A very rich compost is used for this potting, but it is kept very porous by a free use of coarse grit. A very strong cane in the centre of the plant is required for supporting the growths. For the rest it consists in careful watering, syringing, ventilation, shading, and stopping of the shoots to within six weeks of the time they are required to commence flowering. In such a manner plants are grown which measure 10 feet in height. It is unnecessary to keep the plants after the second season."

BOTANICAL MAGAZINE.—In the issue for November (No. 1,449) the following species are described and illustrated:—

ARCTOTIS DECURRENS (*Jacq.*), tab. 8,162.—A beautiful figure is given of this species, a plant which was obtained from Mr. W. E. GUMBLETON. The species was originally introduced into this country from the Cape in 1794, and was in cultivation at Kew in 1813. The plant seems not to mature seeds in this country, but can be propagated by means of cuttings which grow vigorously, reaching a height of 4 to 6 feet in about two years. They thrive in a loamy soil, and, except during the winter, require plenty of water.

RHODODENDRON INTRICATUM (*Franch.*), tab. 8,163.—This species, belonging to the Osmanthus section, is figured from a plant supplied by Messrs. JAS. VEITCH & SONS. The plant was awarded a First-class Certificate, under the name of *R. nigro-punctatum*, *Franch.*, at a meeting of the Horticultural Society on April 2 of this year, but comparison with type specimens show that the plant was then not correctly named. The plant is said to be hardier than the dwarf Indian forms, and it will form a suitable addition to the Alpine garden or Ericetum. The plant has been figured in the *Gardeners' Chronicle*, April 27, 1907, f. 111.

CEOLOGYNE LAWRENCEANA (*Rolfe*), tab. 8,164.—This is a fine species from Annam, introduced into cultivation by Messrs. SANDER & SONS. A specimen which flowered in the collection of Sir TREVOR LAWRENCE, Bart., received an Award of Merit at a meeting of the Horticultural Society in 1905. It may be compared to *Cœlogyne speciosa*, Lindl., from which, however, it shows differences in the mode of origin of the inflorescence, as well as in the details of the lip and keel.

SHORTIA UNIFLORA (*Maxim.*), tab. 8,166.—This is a beautiful plant, differing from the better known *S. galacifolia* in its creeping habit and its larger rose-coloured flowers. The Kew examples were obtained from Yokohama, and flowered freely last April in an unheated frame. The plant is hardy and likes a moist, peaty soil and an open position. The leaves, like those of the other species, assume a rich crimson colour in autumn and winter.

HORTICULTURAL CLUB.—The next house dinner of the club will take place on Tuesday, November 12, when Mr. GEORGE GORDON, V.M.H., will deliver a lecture on "Gardens of Roses," to be illustrated with lantern slides.

MR. GEORGE SCHNEIDER.—We have received the following interesting communication:—"A few English friends of Mr. GEORGE SCHNEIDER, president of the French Horticultural Society of London, are desirous of celebrating his recent promotion to the rank of Officier du Mérite Agricole. A dinner has therefore been arranged to take place at the Café Royal, Regent Street, W., on Saturday, November 16 next, at 7.15 p.m., when a presentation will be made to Mr. SCHNEIDER. You are cordially invited to attend. The price for the dinner will be 6s. per head, and, for the purpose of the presentation, subscriptions not exceeding 5s. are solicited. Replies should be addressed to Mr. W. HIEHLE, Flower Market, Covent Garden, W.C., not later than November 12.—C. HARMAN PAYNE, Foreign Secretary, National Chrysanthemum Society." We are sure Mr. SCHNEIDER has thoroughly deserved the congratulations that are to be offered to him under such felicitous circumstances.

ICONES SELECTAE HORTI THENENSIS.—Tome vi., fasc. 3 and 4.—This work, describing and figuring the plants of interest cultivated in the garden of M. VAN DEN BOSSCHE, at Tirlemont, in Belgium, contains many notes of interest. *Dombeya Wallichii*, Benth. and Hook., from Madagascar, is a fine plant, flowering in December. It was figured in the *Botanical Magazine*, vol. li., tab. 2,503. *Tetradlea pilosa*, Labill., is related to the blue-flowered *Tremandra*, not seldom to be seen in conservatories. It has a somewhat similar habit, bearing acicular heath-like leaves, but rosy flowers. The plant is often confused with *T. ericifolia*, in which the leaves occur in whorls, which is seldom the case in the plant under consideration.

A NEW SPECIES OF EREMURUS.—M. O. A. FEDTSCHENKE has recently described a new species of *Eremurus* under the name of *E. chinensis*. The plant occurs at Kan Su and Su Tchuen in Western China, and was collected by Messrs. PRATT and POTAMIN. The flowers, some 60 or 70 in number, are borne in a spike, and recall those of *E. Olgae*, differing chiefly in the narrower segments of the perianth. *La Tribune Horticole*, October 19.

"THE GARDEN THAT I LOVE" (Second series), by ALFRED AUSTIN.—Some of our readers may recollect the appearance of the first volume which was issued under the above title. In the new series the Poet Laureate continues to use the garden as an incidental setting for rather discursive conversations and reflections. There are diatribes against exhibition flowers, praises of manure water, and many verses on various subjects. A disquisition on Strawberries leads quite naturally to an appreciation of England's greatness *vis à vis* an interview with an American globe-trotter. The work is published by Messrs. MACMILLAN & CO.

A SANCTUARY FOR PLANTS AND BIRDS.—The New Zealand Government intend to make the small island of Kapiti, situated in Cook's Straits, a sanctuary for native species of birds and plants, especially those which are becoming rare. Dr. L. COCHAYNE was commissioned to undertake a botanical survey of the island. An interesting report is the result, in which are described the various plant formations, and an enumeration of the indigenous Ferns and flowering plants. *Corynocarpus laevigata*, *Dysoxylum spectabile*, *Macropiper excelsum*, *Myoporum laetum*, and *Melicactus ramiflorus* are conspicuous trees.

LIBRARY OF THE LATE DR. MASTERS, F.R.S.—Messrs. SOTHEBY, WILKINSON & HODGE have announced the sale of the late Dr. MASTERS' library, which will take place at the sale rooms, 13, Wellington Street, Strand, London, on Thursday, November 21. There are 246 lots, including valuable works on botany and scientific horticulture, agriculture, chemistry, &c. Catalogues may be obtained from the auctioneers, 13, Wellington Street, Strand.

NATIONAL CHRYSANTHEMUM SOCIETY.—We are informed that the annual dinner will take place in the Royal Venetian Chamber, Holborn Restaurant, High Holborn, W.C., on Tuesday, November 26, at 6.15 p.m. CHARLES E. SHEA, Esq. (president of the society), will preside, and will be supported by Sir ALBERT ROLLIT, D.C.L., LL.D. The Challenge Trophy and the Holmes Memorial Cups and Medals will be presented to the winners during the evening. The presence of ladies is specially desired.

LEGACY TO A GARDENER.—By the terms of the will of the late Mr. HENRY J. FRANCIS, of Rosenheim, West Hill, Wandsworth, a sum of £200 is to be paid to his gardener. Other servants also benefit under the will, and a considerable sum is left to benevolent institutions.

DEATH OF A WELL-KNOWN BOTANIST.—Professor WILLIAM NATION died recently at the residence of his niece, Mrs. J. SCOTT, 80, Bramfield Road, Clapham Junction. Although he had been in failing health for some years, his death was rather sudden, and he was confined to his bed only two days. He had reached the ripe age of 81 years. The deceased gentleman was born at Staplegrave in 1826, and having in 1840 passed the necessary examination, he was appointed to the Royal Botanical Gardens at Kew. Here he remained till 1849, in which year he was sent by the authorities to study and explore the flora and fauna of South America, and, as the translation of an article in the *Commercio*, dated Lima, May 26, 1907, shows, he was an active assistant to eminent scientists, such as DARWIN, Sir CLEMENTS MARKHAM, Sir WILLIAM HOOKER, and Dr. P. L. SCLATER, late secretary of the Zoological Society, London. Mr. NATION was made Professor of the National College at Guadalupe, and discovered and classified many hitherto unknown species of birds, flowers and animals found in the neighbourhood of Peru. After having spent 57 years of his life at his scientific labours he was granted a small pension, which ceased directly he left Lima. He came to London, where he resided up to the time of his death with his niece. The funeral took place at Wandsworth Cemetery. *South-Western Star*.

MR. J. WRIGHT, V.M.H., whose bereavement was recorded in our last issue, requests us to state that it is impossible to reply at present to the numerous letters of sympathy he has received.

"LA MERITE AGRICOLE."—We have more than once remarked the generosity of the French Government in bestowing this decoration on workers in horticulture other than French subjects. One of the most recent instances is the case of Mr. NICODEMO SEVERI, a corresponding member of the National Horticultural Society of France, who is sub-director of the public gardens of the City of Rome and editor of the Italian gardening paper, *La Villa ed il Giardino*. Mr. SEVERI has been appointed Chevalier of the Order.

Publications Received.—*Forage Crops*, by Edward B. Voorbees, D.Sc. (U.S.A.), published by Macmillan and Co., Ltd. Price 6s. 6d.—*Flowers and Fruit for the Home*. Edition II. By J. I. Robinson. Published by Mr. T. N. Foulis. Price 2s. 6d.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

JUDGING GRAPES.—After the many expressions of opinion in these columns over the Grape-judgment at the recent Fruit Show—a judgment which does unquestionably, though doubtless unintentionally, reflect on the honour of Mr. Justice Swinfen-Eady's gardener, Mr. Lock—is it not incumbent on the Council of the Royal Horticultural Society to appoint next year a special Committee or Commission of one of its own body and two members of the Fruit Committee to inspect the vine when in fruit, and to report upon it to the Council? Only in that way can the disputed matter be rightly settled. As a matter of justice to all concerned, such a course as is here suggested seems absolutely essential. A. D.

The awards of the four judges, whose names are appended, having been publicly questioned (see page 316), we, in courtesy to the parties interested, briefly state the facts as follows:—Three collections of fruit were very carefully pointed through, and in doing so we were very suspicious that two bunches of white Grapes, by their appearance, were not true Muscat of Alexandria, although named as such. Ultimately we decided to exercise our rights, and taste the Grapes. This test of quality fully confirmed our previous doubts, for, in addition to the suspicious shape of the berries, there was a total absence of Muscat flavour and an unusual thickness of skin. As this was the unanimous opinion of all four judges, and in order to render perfect justice to all concerned, there was no alternative but to reduce the number of points awarded to these said Grapes previous to tasting, and which, of course, very materially altered the position of the exhibit in question. It may be added that we accept no responsibility for any naming of Mr. Lock's Grapes by other persons, nor for any previous awards that may have been made to his "Muscats." N. F. Barnes, William Crump, John Doe, C. R. Fielder (Judges in Class I.)

MUSCAT HAMBURGH GRAPE.—In my note on p. 316, Greave's Muscat Hamburg was a misprint for Snow's Muscat Hamburg. This fine Grape was extremely well grown at Wrest Park for many years, but it was about 1860 when attention was especially drawn to the variety under the above name, though whether Mr. Snow claimed it as a seedling or not, I have failed to ascertain. My impression is that it was generally believed in the district to have originated in Wrest Park Gardens, but it is beyond dispute practically identical with the old Black or Red Muscat of Alexandria. Perhaps Mr. Mackinlay could give some information on this point, for I know he is well up in the history and traditions of the interesting garden he superintends so well. When I last had the pleasure of visiting Wrest Park we had so much to discuss in regard to hardy fruits and vegetables that we missed several other subjects of importance. It might be added that Venn's Seedling was considered to be distinct by Dr. R. Hogg, and was awarded a First-class Certificate by the Royal Horticultural Society in 1874; but Mr. A. F. Barron regarded it as identical with Muscat Hamburg, an opinion shared by most who have grown the two side by side. Still, it was raised from seed at Sneyd Park, Bristol, beyond doubt. R. L. Castle.

APPLE CHARLES ROSS.—As that fine dessert Apple Charles Ross has so worthily won its spurs by being placed first in the class for "any other dessert variety" at the recent R.H.S. show, thus repeating the similar experience of last year, I trust that next year it will be accorded a class to itself. No recently introduced Apple, and few old ones, excels it in flavour or appearance. This "any other variety" class should be made the stepping-stone to higher honours, and inasmuch as fruits of any variety have to be tasted for flavour, the test is a good one. Two of the varieties honoured with a special class each—Ben's Red, with two dishes, and Edmund's Pippin one dish—are apparently not popular varieties. In any case, as a dessert fruit Charles Ross is greatly superior to either. D.

CHRYSANTHEMUM SHOWS: BOARDS V. VASES.

I sympathise with such an enthusiastic cultivator as Mr. Norman Davis in the great interest he takes in all matters connected with the Chrysanthemum. I have long noted the lack of interest shown in the exhibition side of the flower. The Chrysanthemum, in certain phases, does not stand alone in this loss of public favour, other special flowers suffer in the same way. The show Dahlia has given place to the less formal Cactus type. The florist's Carnation is not so interesting to the general public as the more showy and useful American varieties. Surely no one will dispute the advantage of the change in both the examples quoted. Even the popular Rose has, in one section, lost its hold upon the public, though to a lesser extent perhaps. I allude to the H.P. section. No one will say that these are as popular as what are termed "garden" varieties—those cultivated to produce a mass of blossoms. Nowadays, when quantities of flowers are prized more than individual quality of flower, no wonder that the H.P. section has given way somewhat to the more freely-flowering type. Now, as to Chrysanthemums, apart from an exhibitor's point of view, no one will say that these large blooms are useful, except to create wonderment and a surprise for visitors. In private gardens where exhibiting is not favoured, there are fewer large blooms cultivated than was the case a few years ago. This has an effect upon the public; if non-exhibitors do not encourage them at home, they are not likely to do so at public shows. This is one section of the visitor class which diminishes the number of enthusiasts, and thus they are lost to the shows. The great increase in out-of-door varieties for flowering in October, and also those for November decoration in quantity indoors, of which the single-flowered section is a case in point, has done much to alter the exhibition aspect. It is not that the public take so little interest in the manner they are staged at shows, but rather it is the diminishing interest in the method of culture adopted, which unquestionably entails a maximum of cost and a minimum of return. This is opposed to present-day requirements. Many persons who have not a knowledge of flower-show management would at once sweep away the orthodox show board and substitute vases. In support of their argument they would quote the Edinburgh and Birmingham shows. In the neighbourhood of Edinburgh Chrysanthemum societies are not so numerous as they are around London. The great success of the Edinburgh Society in the sole use of vases is due in a great measure to the splendid prizes offered. No other society can do likewise in this respect. It is not the Chrysanthemum alone that enables the executive to provide such prizes; it is, as Mr. Godfrey says, the added charm of good music. Perhaps no society is better served by trade exhibits than the Birmingham Society; these add considerably to the display and attraction for the visitors, and at a small cost to the society. Many societies are strongly censured for failing to discard the stands entirely. But the executive officers are perfectly well aware that more exhibits can be obtained for the same amount of prize money when the blooms to be shown are on boards than if they were to be staged in vases; they have to make a display, and do it in the manner best calculated to serve their own ends. Prizes of the value of a couple of guineas cannot induce exhibitors to enter in "vase" classes; in many prize schedules this is the limit of the leading classes. There is no comparison in the cost of conveyance to shows of blooms for "vase" classes as compared to those for stands. I note that the National Chrysanthemum Society has dropped the classes for incurved blooms in vases, owing mainly, I presume, to want of competition. No one who saw the winning exhibits the last three years could do other than praise the method of displaying the blooms, even of that class which has apparently lost its hold on the public and exhibitors alike. At other shows there has been, during the last two years, a steady increase in the number of exhibitors of incurved blooms on boards, attributable perhaps to an improvement in the new varieties in that section as compared with those introduced just previously, which were admittedly neither incurved nor Japanese. In what is known as the great vase class at the N.C.S. November show, three blooms of each, instead of five, are now required. This will make the class easier for the exhibitor, and there will

be less likelihood of the vases getting overcrowded. At some shows vase classes for large bloom do not increase at all, but there is to be seen a gradual return to the boards. What is taking the place of the vase classes at many shows is the display of what are known as "decorative" varieties cut in sprays of many small blooms apiece loosely arranged in vases, baskets, and epergnes. Indeed, the last two styles of arrangements are meeting with much favour. Committees do not fail to note the trend of public feeling, and they cater accordingly. The Birmingham leading class is quite recast this year, reading thus: "A group of cut blooms of Chrysanthemums (to face all ways), any variety admissible, to be arranged on the floor in a space of 20 feet by 12 feet. Cut foliage, Ferns, and foliage plants admissible, variety and general effect to be considered, any kind of vase or stand may be used." The prizes are £15 with a silver challenge shield, second £10, third £7 10s., and the fourth £5. This is a plain proof to me that the Birmingham officials are not satisfied with either vases or boards in providing the chief attraction. E. M. Innes.

—If the primary object of flower shows, and Chrysanthemum exhibitions in particular, is to enable the flowers to be seen and minutely examined by the judges, then the old method of exhibiting the flowers in tubes in boxes is best. If, however, the principal aim is to create a handsome artistic display, then exhibiting the flowers on long stems in vases is the proper plan. Thus the question must be considered from the standpoint of the judges or the public. The vase method should furnish the best floral effect, yet their decorative value has been discounted by the method adopted of staging the flowers in vases of equal height, and then they appear just as formal and monotonous as when shown in boxes or tubes. Probably the chief difficulty to surmount in the exhibiting of large Chrysanthemum blooms, as with the large, rotund, show Dahlias, is that the blooms are too massive to get from them good effects, except when shown in quite tall receptacles, each having nine or 12 blooms, with abundant decorative foliage. By this arrangement, as was seen in Mr. N. Davis's groups at the Palace, for instance, nothing can be nobler. But the common rule is to show 12, 18, or 24 big blooms in trebles in vases without any decorative foliage, and only heavy formality without beauty results. Were vases arranged in diverse heights, and a free hand given to exhibitors both to use any decorative foliage and to drape their vases, the effect obtained would then be very pleasing. By allowing draping the objection to the naked appearance of ungainly vases would disappear. It by no means follows if flowers be shown in vases, that judges should favour large coarse ones in preference to those less large, but more refined and perfect. I very much doubt whether any judges of repute do so now. At the shows, the vase is everywhere displacing the box as a means of displaying flowers, and were the same effort made to arrange or stage Chrysanthemums as is done in the case of Roses or winter-blooming Carnations on long stems, the same pleasing results should follow. Judges are able to judge these flowers (Roses and Carnations) when they are shown in vases as in the case of Sweet Peas, with considerable facility, and there seems no reason to assume that Chrysanthemums may not be judged also as easily. It does seem, according to recent complaints, as if competitors at Chrysanthemum shows were put to rather increased cost in the transit of their flowers on long stems than was incurred by carting huge boxes. That complaint, however, appears difficult to justify, seeing that they have to cart not vases, but flowers only. It does seem as though public interest in Chrysanthemums at shows is waning, and this is probably mainly due to the fact that gardens and markets are filled with early flowers long before shows are on. D.

FASHIONS IN FLOWER-GARDENING.—The leading article in the issue for October 12 on this subject was very opportune. Who could but admire the gorgeous display of colour even from the Pelargoniums employed this summer in front of Buckingham Palace? Such masses of colour in suitable places are quite appropriate, and will always attract attention and admiration. At Blickling Hall, in Norfolk, the flower-garden is

situated near the house, and has a background of evergreens and forest-trees. The flower-beds are made as bright as it is possible to make them, and the effect is always excellent. The severe critic might say upon examining these beds there is nothing particular in their individual arrangement, yet the brilliancy of the whole makes the gardens attractive to thousands of visitors. In Lord Aldenham's gardens at Elstree bright masses of colour are employed in such a manner that the effect is not in the least of a garish nature. For instance, a large bed is filled with *Lobelia cardinalis* Queen Victoria, which produces flower-spikes nearly 6 feet in height, thickly furnished with rich cardinal-coloured blossoms. Were it not that this bed is backed up by a wealth of foliage plants, and subdued by the green setting of grass and the carpet of *Antennaria tomentosa*, some critics might even object to this brilliant parterre. Where the ordinary green or bronze-coloured Cannas are employed in a mass with such subjects as *Streptosolen Jamesonii*, *Plumbago capensis* (with a thin crop of flowers), large numbers of silver-leaved *Veronicas*, *Acalyphas* and dull-coloured *Iresines*, the effect is monotonous and uninteresting. Even if big beds are planted with mixed species, it is still possible to have them bright in appearance by the introduction of free-flowering, showy plants to aid in relieving the dull hues of so many sub-tropical species. *E. M.*

POTATO "HIGHLANDER."—My attention has been called to the report of the National Potato Society's Show, published in the *Gardeners' Chronicle* for October 12. Your correspondent refers to Highlander "No. 1" and "No. 2," assuming there are two stocks, and suggesting I should give an explanation. So far as I know, only one stock of true Highlander, as introduced by me, is in commerce (there may be substitutes for which I am not responsible), but if your correspondent refers to Nos. 1 and 2 as on trial at Wye College, this is easily explained. These were not different stocks, but the seed last year was grown in different districts, with a different result as to crop. *William Deal.*

SOCIETIES.

ROYAL HORTICULTURAL

Scientific Committee.

OCTOBER 29.—*Present:* Mr. E. A. Bowles, M.A., F.L.S. (in the chair); J. W. Odell, G. Gordon, A. W. Sutton, J. T. Bennett-Poë, W. C. Worsdell, G. S. Saunders, H. T. Güssow, A. Worsley, and F. J. Chittenden (hon. secretary).

Cup-shaped leaves of *Saxifraga*.—Mr. W. C. WORSDELL showed leaves of *Saxifraga ligulata* which had grown in a cup-shaped manner, so that the leaf had the appearance of an inverted cone on the top of the leafstalk. The plant on which they had been produced each year formed similar leaves in October and November, but not in the early part of the year. Not all the leaves were so far developed as to assume the cup-shape completely, but all stages from the normal to this form were to be found. Mr. WORSDELL suggested that the cause of the malformation might have been lack of vigour in the plants.

Malformed *Cattleya*.—Mr. BENNETT-POE showed two flowers of *Cattleya labiata*, each of which had but two petals and two sepals, the labellum in each case being completely suppressed as well as one of the sepals. Mr. WORSDELL took the flowers for further examination.

***Calycanthus* Fruits.**—Mr. BOWLES showed fruits of *Calycanthus occidentalis* from his garden for comparison with those of *C. laevigatus* shown at a recent meeting.

Marrow Cabbage.—Messrs. COOPER, TABER & Co. sent specimens of the Marrow Cabbage (*Chou Moellier*) grown at Witham, Essex. The Cabbages were about 5ft. in height, the stem being between 4in. and 5in. in diameter in the middle. The central part of the stem is filled with soft tissue, and forms the chief edible portion of the plant. The Cabbage is grown largely in France, where it is pulped and used for cattle food in districts where Swedes and Turnips will

not grow. It is an exceedingly interesting example of a variation of the Cabbage, where the reserve food is stored in an elongated, thickened stem instead of in a barrel-shaped stem as in Kohl Rabi.

Kale with leaf-like growth from midrib.—W. J. MAITLAND, Esq., of Witely, sent leaves of a purple Kale having leaf-like outgrowths from the midrib. This kind of hypertrophy is common in Kales, and has become fixed, so that such forms come true from seed.

Hybrid Pear and Quince.—Messrs. JAMES VEITCH & SONS sent further specimens of the hybrid fruits borne on the two plants raised from seeds from a single fruit of the Pear Bergamotte Esperen, the result of crossing that Pear with the Portugal Quince. Immature fruits were shown at the meeting of September 3, and as was then observed, the fruits of one tree approached the Pear in character, those of the other the Quince. The Pear-like hybrid for which Messrs. VEITCH propose the name *X Pyronia* John Seden, was practically ripe, and had a distinct Bergamotte flavour. Bergamotte Esperen ripens much later. The Quince-like fruits were still quite hard.

Crocus.—Mr. BOWLES showed specimens of a Crocus which he believes to be a hybrid between *Crocus speciosus* and *C. pulchellus*. In 1904, and each season since, he has found a corm or two among seedlings of *C. speciosus* from seeds saved from plants growing near *C. pulchellus* that show characters intermediate between these two species, and which may be tabulated as follows:—

	<i>C. SPECIOSUS</i>	<i>C. PULCHELLUS</i>	SUPPOSED HYBRID
Throat	white	orange	yellow shading to white
Anther	orange	white	cream colour
Filament	white	orange	yellow
	glabrous	pubescent	with scattered hairs
Corm-tunic	membranous	coriaceous	a thick stiff membrane

In colour the perianth segments are somewhat variable, and most nearly resemble *speciosus*, but are paler and less distinctly veined, except on the inner surface of the inner segments, where the characteristic purple veins of *pulchellus* are clearly defined.

WEYBRIDGE CHRYSANTHEMUM.

OCTOBER 30.—The ninth annual autumn exhibition was held in the Holstein Hall on this date, and was again a success. The arrangements were perfect in the hands of the hon. secretary, Mr. J. Lock.

The leading open class for cut blooms was that for 24 Japanese blooms of distinct varieties, and in which a handsome silver challenge cup was offered for the premier exhibit. Mr. T. STEVENSON, gardener to E. G. MOCATTA, Esq., Addlestone, won the trophy easily, with large fresh examples of such popular varieties as Lady Talbot, Mrs. Norman Davis, and Mrs. R. Hooper Pearson. In the class for nine varieties of Japanese Chrysanthemums, three blooms of each kind arranged in vases, there was only a very limited competition. Mr. T. CARYER, gardener to A. G. MEISSNER, Esq., Weybridge, was placed 1st. The best vase of Chrysanthemums arranged with foliage was shown by Mr. STEVENSON; his variety was Mrs. A. T. Miller, lightly arranged with dark Oak leaves.

Mr. CARYER won in the class for six triplets of Pompon varieties with standard kinds. Single-flowered sorts made even a better display than the Pompons, and in the "single" classes Mr. STEVENSON won for six bunches, each of three flowers; the varieties were well chosen, and the exhibit was pleasingly staged. Mr. W. C. PAGRAM was a good 2nd to Mr. STEVENSON.

A class was provided for a collection of cut Chrysanthemums, arranged with any kind of foliage for effect in a tray measuring 3 feet by 2 feet 6 inches. Mr. E. WATFORD was easily 1st with fully developed flowers of Japanese varieties arranged in Bamboo stands, with good foliage well blended.

Two classes were devoted to ladies. For the best arranged basket of Chrysanthemums, with any foliage or grasses, Mrs. ELWOOD, Weybridge, was placed 1st with a pleasing arrangement. A basket of autumn foliage, berries and grasses, shown by Mrs. F. WOOD, Brown Lodge, Weybridge, obtained the 1st prize.

The exhibits of groups of Chrysanthemums and foliage plants were satisfactory. Mr. PAGRAM had much the best exhibit in this section, using many single-flowered varieties in his group.

MAIDENHEAD CHRYSANTHEMUM.

OCTOBER 31 & NOVEMBER 1.—This exhibition again proved a great success; the entries totalled 60 more than at last year's display, and all the classes were well contested.

In the large class for 48 Japanese blooms in 24 varieties, Mr. Waller, gardener to Mr. HAMMERSLY, Abney House, Bourne End, was awarded the 1st prize, which carried with it a Challenge Cup. Mr. Waller was successful in winning the cup last year, and he has thus taken it two years in succession. There were four competitors in this class. Mr. Waller also staged the premier flowers in the principal vase class and in several others. The best group of miscellaneous plants was displayed by Mr. R. EVANS, gardener to H. F. SLATTERY, Esq., The Orchard, Marlow. In this class there were again four competitors. Mr. EVANS was also successful in the class for 18 Japanese blooms in competition with six other growers. The 1st prize carried with it a Silver Medal.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.

NOVEMBER 1.—This thriving and excellent society held its 21st annual dinner at the Holborn Restaurant on the above date. Sir Albert K. Rolit presided, and he was well supported by Messrs. H. J. Veitch, H. B. May, G. Gordon, Cox, Anderson, J. T. Taylor, T. Bevan, Withy, J. Hudson, Riley, Scott, and a large gathering of the officers, committee, and members.

The occasion will be memorable because Mr. Jas. Hudson, who recently retired from the treasurership, after holding office for 25 years, was the recipient of a very handsome testimonial.

In proposing "Success to the Society," the Chairman, dividing his speech into three parts, dealt firstly with the Royal Horticultural Society, its rise and progress; secondly, with horticulture as an art and as a science, showing the variety and usefulness of the gardener's calling; and thirdly, with the U.H.B.P. He said he had special knowledge of friendly societies, and that knowledge, together with a careful scrutiny of the society's work and the actuarial reports concerning it, enabled him to say that the U.H.B.P. was one of the very best institutions of its kind. Its funds were well invested, its rules excellent, its management careful, and its usefulness beyond question. He urged young gardeners to become members, and so provide for sickness, for infirm old age, and for those whom at death they might leave behind. Mr. Chas. H. Curtis, chairman of committee, in replying, observed that there were now 1,200 members, and the invested funds amounted to £30,000, a larger sum per member than any other friendly society could show. He then asked Sir Albert, on behalf of the members, to present to Mr. J. Hudson a substantial testimonial of the high esteem in which the society held one who had for 25 years acted as treasurer.

Sir Albert made the presentation, and handed Mr. Hudson a very handsome solid silver tea and coffee service and salver, and an enlarged portrait of himself in carbon, framed in oak. The inscription on the salver read:—"Presented to James Hudson, V.M.H., Nov. 1, 1907, by the members of the United Horticultural Benefit and Provident Society in recognition of services as treasurer, cheerfully rendered over a period of 25 years—1882-1907."

Mr. Hudson was warmly greeted when he returned thanks for so signal a mark of esteem. He had acted as treasurer without hope of reward, and he was glad to find his efforts were so highly appreciated. In his first year of office he invested £200, and in his last year £2,000, for the society.

The other toasts were "The Honorary and Life Members," "The Chairman," "The Visitors," and "The Press."

The tables were handsomely decorated with plants, flowers and fruits supplied by Messrs. J. Veitch & Sons, H. Cannell & Sons, W. Cutbush & Son, and many other friends.

National Chrysanthemum Society.

NOVEMBER 6-7-8.



CHRYSA^NTHEMUMS are now at their best, and the autumn exhibition of this society was held on these dates at the Crystal Palace, Sydenham. Everything combined on the opening day to make the show a success, and in this respect it was one of the best held since the notable displays made in the old Westminster Aquarium.

The weather was perfect for November; the displays more than equal to those of recent years, both in number and in quality; whilst the arrangements were perfect. The exhibition gained much from the spectacular standpoint in the very handsome groups of Chrysanthemums staged by the leading trade firms, who make a speciality of this autumn flower, and in this connection we may instance the very beautiful groups staged by Messrs. H. J. JONES, NORMAN DAVIS, H. CANNELL & SONS, and W. WELLS & CO. Although no fewer than eight First-Class Certificates were granted to new varieties, none could be declared as a great advance on existing sorts.

DISPLAYS OF CHRYSANTHEMUMS.

In Class I. (open), the 1st prize, consisting of a large Gold Medal, was taken by Mr. NORMAN DAVIS, Framfield, Sussex. He exhibited a display arranged on a circular space of about 300 superficial feet. The form was slightly conical, and it consisted of Incurved, Japanese, Reflexed, and single-flowered varieties, mixed with Ferns, Asparagus, Codiaums, &c. Eight tall bouquets of Chrysanthemums, Japanese varieties, and one bouquet in the centre completed the scheme. The Japanese blooms were quite up to the best exhibition standard. Very fine were Mrs. Norman Davis, Mrs. J. Hygate, an Incurved Japanese white; Algernon Davis, a beautiful golden yellow; W. Ring, old gold, a grand Incurved Japanese; Mad. G. Rivol, one of the best of its tint, which is bronze-yellow, &c. The exhibitor of this display was also awarded the "Dean" Memorial Medal, offered for an exhibit having special merit.

The second class was arranged for a floral display of Chrysanthemums and suitable foliage plants in pots, with the addition of cut blooms and foliage; area not to exceed 200 square feet. Trade members were excluded from this class. The 1st prize was taken by Mr. W. Howe (gr. to Lady TATE, Park Hill, Streatham Common), with a massive, cone-shaped group, rather closely filled with Chrysanthemums of Japanese varieties, partly shown as cut blooms and the rest as growing in pots. These formed the bulk of the exhibit, and were of general fine quality, single and semi-double-flowered varieties formed the remainder, Ferns, Palms, and Codiaums being interspersed with these. The group suffered in effect owing to lack of contrast with green-leaved plants, and from the closeness of the arrangement.

CLASS FOR AFFILIATED SOCIETIES.

A class was arranged for affiliated societies to compete with each other in showing a semi-circular group of cut Chrysanthemums on a space measuring 12 feet by 6 feet, to be arranged on the floor, to consist of any section, but including not fewer than four sections. The flowers were arranged in vases, and relieved by suitable Ferns and other "greenery." The only exhibit was one from the Dulwich Chrysanthemum and Horticultural Society, which accordingly was awarded the 1st prize. It was a creditable group, but the varieties of Chrysanthemum should have had names attached to them. Here was a class that ought to have been one of the most interesting in the show, and yet it was entered by one society only!

CHRYSANTHEMUMS SHOWN IN VASES.

The principal class in those for blooms staged in vases was that for 12 vases of specimen blooms of Japanese varieties. Each receptacle was required to contain three blooms of a distinct variety, with not less than 6 inches of the stem above the top of the vase. As the

vases were 14 inches in height, they made a good display collectively.

The specimen blooms shown in this class were superb in size, shape, and condition, and the 1st prize fell to Mr. J. HALL (gr. Melchet Court, Romsey, Hants). The varieties were R. Vallis, Bessie Godfrey, Edith Smith, W. A. Etherington, F. S. Vallis (immense blooms), J. H. Silsbury, Mrs. A. T. Miller, Mme. P. Radaelli (perfect blooms), Mrs. W. Knox, Mrs. Vallis, Maud Jefferies, and Mme. Rivol. The 2nd prize was taken by Mr. W. IGGULDEN, Lock's Hill Nurseries, Frome, with very slightly inferior blooms. His best were Viola, F. S. Vallis, Magnificent, Mrs. A. T. Miller, Walter Jinks, and Mme. G. Rivol. Mr. W. Mease (gr. to A. TATE, Esq., Downside, Leatherhead), won the 3rd prize.

Twelve vases of Incurved blooms (trebles), distinct.—Only two exhibits were forthcoming in this class; the better was shown by J. B. HANKEY, Esq., Leatherhead (gr. Mr. W. Higgs). The vases were spaced widely apart, and each contained three blooms, on long stems with foliage. The largest flowers were those of the variety Lady Isabel, the florets of which are white, with a faint tinge of rose in the basal florets; J. Agate (white, and of perfect form), Hanwell Glory (bronzy), Chas. H. Curtis (yellow), Frank Frestian, Topaze Orientale (creamy-yellow), Mrs. G. Denyer (pink), and Embleme Poitevine (yellow), were the pick of the varieties. 2nd, PANTIA RALLI, Esq., Ashted Park, Epsom (gr. Mr. G. J. Hunt), with flowers of less perfect form.

One vase of five blooms of a white Japanese variety.—The best of four exhibits contained the beautiful flower named after Mrs. A. T. Miller. It was shown by JOHN BALFOUR, Esq., Moor Hall, Harlow (gr. Mr. A. Jefferies). 2nd, the same variety shown by Mrs. NATHAN, Little Heath Wood, Potter's Park (gr. Mr. W. H. Newton). Only one other variety, Mrs. C. Beckett, was used in this class, and this received the 4th prize.

One vase of a yellow Japanese variety.—There were five exhibits staged in this class, and much the best were five noble blooms of F. S. Vallis, shown by Mr. JEFFERIES. These flowers were good in every respect. 2nd, Mrs. JEREMIAH LYON, Riddings Court, Caterham Valley (gr. Mr. G. Halsey), with the smaller Bessie Godfrey, a variety of pale canary yellow.

One vase of any other colour than yellow or white.—This class brought forth nine exhibits, of which much the best was that of the crimson W. Beadle, shown by A. T. MILLER, Esq., Leatherhead (gr. Mr. G. Mileham). These flowers were large and very finely coloured. Both the 2nd and 3rd prizes were awarded for flowers of Reginald Vallis, shown by Mr. JEFFERIES and F. J. YARROW, Esq., 18, Abbey Road, St. John's Wood, London, N.W. (gr. Mr. A. Robertson), respectively.

Market varieties, disbudded.—A class was provided for six varieties of Chrysanthemums such as are grown for market. Twelve blooms of each variety were required for a vase. There were only two displays, and of these the largest flowers staged by F. J. YARROW, Esq., 18, Abbey Road, St. John's Wood, London (gr. Mr. A. Robertson), gained the premier award. The varieties were Vivian Morel (pink), Souvenir de Petite Amie (white), Kathleen Thompson (a magnificent bronze variety), Lady Hanham (rose on a bronzy-yellowish ground), Caprice du Printemps (carmine), and Chas. Davis. 2nd, J. L. BURGESS, Esq., Maisey Hampton, near Fairford (gr. Mr. J. A. Humphries), whose best examples were Dazzler (red) and Moneymaker (white).

Anemone-flowered Chrysanthemums.—Three classes were provided for these flowers: the one for Japanese Anemones, another in which Japanese forms were excluded, and the other for mixed types of these flowers. The best examples in the class for Japanese Anemones were shown by T. L. BOYD, Esq., North Frith, Tonbridge, Kent (gr. Mr. A. C. Horton), in competition with three other exhibitors. The examples shown by Mr. Boyd were Le Châlonais, Duchess of Westminster, John Bunyan, Edward Bell, Mme. Lawton, Sabine, W. W. Astor, Mrs. H.

Eland, Souvenir des Norgiots, Owen's Perfection, Sir W. Rayleigh, and Halcyon. 2nd, C. DOUGLAS CLARKE, Esq., Bromley, Kent (gr. Mr. A. Henderson).

Anemone-flowered Chrysanthemums, Japanese excluded.—Mr. BOYD also won in this class with Junon, Gluck, Gladys Spaulding, Lady Margaret, Delaware, J. Thorpe, jun., Cincinnati, Mrs. Judge Benedict, &c. 2nd, Mr. HENDERSON.

Large-flowered Anemone blooms, including Japanese varieties.—Mr. BOYD again won in this class, being followed by Mr. DOUGLAS CLARKE. Mr. Boyd showed fine examples of Mrs. H. Eland and Sir Walter Rayleigh.

Pompon Chrysanthemums.—There were two classes for Pompon varieties: the one for Pompoms of the ordinary type, and the other for Anemone Pompoms. Only three exhibitors were attracted in the two classes, two being in the first named. Of these the winning exhibit was shown by J. L. BURGESS, Esq., Maisey Hampton (gr. Mr. J. A. Humphries), who had the largest and best coloured flowers. Very pretty were Osiris, W. Kennedy (purple), W. Sabey (yellow), Prince of Orange (bronze), Sœur Melaine (white), Mr. E. Rigevor (pink), &c. 2nd, F. J. YARROW, Esq. (gr. Mr. A. Robertson). In the Anemone-flowered class, Mr. HUMPHRIES was awarded the 1st prize for examples of Perle Ella, Antonius, Marie Stuart, Mr. Astie, and Emily Rowbotham.

Single Chrysanthemums.—The schedule required that the sprays of single flowers should not be disbudded, and the collection was to contain not fewer than six varieties. The best exhibit was shown by R. D. CLEASBY, Esq., Langley House, Abbots Langley (gr. Mr. C. Brown). This was a very fine exhibit, the flowers being large and well selected as to colours. Pink varieties, such as Mrs. E. Roberts, Edith Pagram, and F. W. Smith predominated, but there were also white and bronze-coloured flowers. 2nd, Messrs. WM. SANFORD & CO., LTD., Hall Green, Birmingham, with taller but fewer-flowered sprays.

DECORATIVE CLASSES.

(OPEN.)

These, as on former occasions, proved an attractive and popular feature of the exhibition. Dinner tables decorated with Chrysanthemums and suitable foliage were very numerous. The best in the open class was arranged by Mrs. A. ROBINSON, Norhyest, Park Hill, Carshalton, who used tiny bronze-coloured and yellow flowers of decorative varieties in metal displayers, having grasses, Asparagus sprays, &c., as relief. 2nd, Miss B. SAUNDERS, Highgate, with similar varieties.

Mr. Robertson (gr. to F. J. YARROW, Esq., St. John's Wood, N.W.) showed the best vases of Pompon Chrysanthemums arranged with suitable foliage of other plants for effect.

The best vase of single Chrysanthemums was shown by Mr. T. STEVENSON (gr. to E. MOCATTA, Esq., Addlestone, Surrey), in a very strong competition.

Miss COLE, The Vineyard, Feltham, excelled in the competition for a basket of autumn-tinted foliage and berries, with a magnificent basket; and this lady was closely followed by Mrs. BREWSTER, St. Peter's, Canterbury, with a very similar arrangement.

CHRYSANTHEMUMS SHOWN ON BOARDS.

(OPEN CLASSES.)

Incurved varieties.—In the principal class for Incurved Chrysanthemums, that for 36 blooms of distinct varieties, there were four exhibits, three of which were of a high order of merit. The 1st prize was awarded to J. B. HANKEY, Esq., Fetcham Park, Leatherhead (gr. Mr. W. Higgs), for an exceptionally fine collection, the flowers being characterised by their uniformly large size and their clearness of colouring. The blooms throughout showed good globular form, and they were as fine a collection as have been staged in this class in recent years. In the back row were the varieties Mrs. G. Denyer, Duchess of Fife, Mrs. F. Ashworth, Buttercup, H. Hearn, Daisy Southam (a beautiful deep shade of yellow),

Mrs. Barnard Hankey, Embleme Poitevine, Pantia Ralli, Mrs. F. Judson (a fine flower, white), Miss E. Holding, and Lady Isabel (a big flower, coloured a suffusion of pink on white). *Centre row:* Globe d'Or (a pleasing bronzy-red colour), Mme. Vrembley, G. F. Evans, Frank Trestian (a well-formed flower of very pale bronze colour), Godfrey's Eclipse, M. O. Meulanacre, J. Agate (white), Mrs. A. H. Hall, Chas. Curtis (perfect in form), Frank Hammond, Le Peyron, W. J. Higgs (dark, a shade of red). *Front row:* W. Pascoe (rich pink), Mrs. H. J. Jones, Ialene, Mrs. J. Seward, Hanwell Glory, Romance (a fine yellow variety), Doris Rayner, Mme. Ferlat, Ladywell, Topaze Orientale, Nellie Southam, and Triomphe de Montbrun. 2nd, PANTIA RALLI, Esq., Ashted Park, Epsom (gr. Mr. G. J. Hunt). There were many flowers of a high merit in this exhibit, but others were somewhat flat, and the quality was, therefore, not so uniformly good as in the preceding exhibit. The best blooms were Duchess of Fife (white), Godfrey's Eclipse (yellow), Mrs. F. Judson (white), Mrs. B. Hankey (reddish), C. H. Curtis (yellow), Mrs. F. Ashworth, and Globe d'Or. 3rd, A. TATE, Esq., Downside, Leatherhead (gr. Mr. W. Mease).

Twelve Incurred blooms, distinct.—This class was contested by four exhibitors, the largest flowers, shown by J. B. HANKEY, Esq., Leatherhead (gr. Mr. W. Higgs), being awarded the 1st prize. Notable flowers in the premium stand were Romance (yellow), Mrs. G. Denyer (pink), Hanwell Glory (a shade of reddish-bronze), and F. Agate (white). 2nd, A. T. MILLER, Esq. (gr. Mr. G. Mileham), with similar varieties; and 3rd, Mr. G. HALSEY, for compact, uniform-sized blooms.

Six Incurred blooms of one variety.—Of the four exhibits, two were of yellow and one each of a white and a pink variety. The yellow Buttercup, staged by Mr. G. MILEHAM, was adjudged the best.

JAPANESE VARIETIES.

Forty-eight blooms, distinct.—There were six competitors in this class for Japanese varieties, and the quality was much in advance of the flowers staged at the similar show of last year. The premier collection was shown by JOHN BALFOUR, Esq., Moor Hall, Harlow, Essex (gr. Mr. A. Jefferies). The flowers were large, of fresh appearance, and with colours well assorted. Many of the flowers were possessed of those long basal florets which give them a greater depth. The varieties were Mrs. A. T. Miller (as good as ever), Godfrey's Pride, Lady Mary Conyers (a shade of carmine, with recurring tips to the long florets), Mrs. Eric Crossley, Elsie Miller, Mrs. Norman Davis, Reginald Vallis, Dorothy Gouldsmith, Valerie Greenham, Mary Inglis, George Terry, Dorothy Oliver, Sidney Penfold (a pleasing reddish shade), Edith Fuller, Mrs. F. W. Vallis, F. S. Vallis (the largest bloom in the six displays), Walter Jinks (a fine colour—purplish-pink), Mme. Gustave Henry, Mme. A. Choulet, Algernon Davis (richest shade of yellow), Mme. L. Rousseau, Joseph Rocher, Mrs. G. Mileham, Lady Henderson, Lady Hopetoun, Edith Smith, John Peed, Mrs. W. Knox, Mrs. A. H. Lee (one of the best of the red-coloured varieties), Mrs. H. Barnes, Beatrice May, Mrs. Barkley, George Lawrence, O. H. Broomhead, Mme. M. de Mons, Mons. Paul Watine, Oliver Miller (a pleasing shade of pink), Bessie Godfrey (still one of the best "yellows"), W. R. Church (a good bloom, rich-red underlaid with a silvery shade), Duchess of Sutherland, Norman Davis, Marquise Venosta, Magnificent (the richest of the red shades, with a pale yellow reverse), Mme. G. Rivol (yellow, resembling somewhat a large Incurred bloom), W. Gee, Chrysanthemiste Montigny, J. H. Silsbury, and President Loubet. The 2nd prize collection adjoined Mr. Balfour's display; the exhibitor was Mr. G. HALL, Melchet Court Gardens, Romsey, Hants, and in point of quality it was little behind the 1st prize group. Among the more notable flowers we may enumerate Magnificent, Norman Davis (beautifully coloured), Joseph Stoney (rich crimson), Mrs. A. T. Miller, F. S. Vallis, Mme. P. Radaelli, Mme. G. Rivol, Walter Jinks, and Mrs. Norman Davis (white). 3rd, E. G. MOCATTA, Esq., Woburn Place, Addlestone, Surrey (gr. Mr. T. Stevenson).

Eighteen blooms, in not fewer than twelve varieties.—The prizes in this class were given by Mr. W. Wells, Merstham, and the conditions were that not more than two blooms of one variety were to be staged, and they were to consist of novelties introduced during 1906 or 1907, or novelties not yet in commerce. There were two exhibits only in this class, staged by Mr. NORMAN DAVIS, nurseryman, Framfield, Sussex, and A. T. MILLER, Esq., Emlyn House, Leatherhead (gr. Mr. G. Mileham), who were awarded the 1st and 2nd prizes in the order named. Mr. Davis staged his flowers on long stalks in a setting of Ferns and on a groundwork of green velvet, the effect being better than that of any other exhibit in the show. His varieties were Mrs. C. Penfold (yellow), President Loubet, W. Ring (pale yellowish-bronze), Sidney Penfold (reddish), Mrs. Norman Davis (white), C. J. Champion (pink), British Empire, a white unnamed seedling, J. Turk Adams (yellow, tinged with bronze), Mme. J. de la Croul, Magnificent W. Watson, and Thos. Stevenson (clear yellow). Mr. Miller exhibited several unnamed seedling varieties.

President's prizes.—The president of the society, Charles E. Shea, Esq., offered prizes in a class for 24 blooms of Japanese varieties, and this class attracted six exhibitors. The best display was from the gardens of JOHN BALFOUR, Esq., Moor Hall, Harlow, Essex (gr. Mr. A. Jefferies). He displayed Reginald Vallis, Mme. G. Rivol, Bessie Godfrey, Walter Jinks, Magnificent, Mrs. A. T. Miller, F. S. Vallis, W. Gee, J. H. Silsbury, and others in fine form. 2nd, Mr. G. HALL, Melchet Court Gardens, Romsey, Hants, with an exhibit not far behind the 1st prize collection in merit, and including Walter Jinks, Mme. P. Radaelli, F. S. Vallis, Leigh Park Wonder, Magnificent, A. Davis, and other standard kinds. 3rd, J. B. HANKEY, Esq., Leatherhead (gr. Mr. W. Higgs). The other exhibits were all of fine quality.

Twelve Japanese blooms, distinct.—Prizes were offered for 12 Japanese Chrysanthemums, of distinct varieties, by the Ichthemio Guano Company, Ipswich. This proved a strongly contested class, no fewer than ten exhibitors competing. The flowers generally were of excellent quality, and especially the dozen staged by E. G. MOCATTA, Esq., Addlestone, Surrey (gr. Mr. T. Stevenson), which gained the 1st prize. The varieties were Lady Talbot (a large yellow flower of the F. S. Vallis type), Leigh Park Wonder, Mrs. Norman Davis, F. S. Vallis, Walter Jinks (a flower of fine quality), Algernon Davis, Henry Perkins, Reginald Vallis, Mrs. W. Knox, Mrs. A. T. Miller, Magnificent, and Duchess of Sutherland (a deep shade of yellow, an old favourite). 2nd, Mr. G. HALL, Melchet Court Gardens, Romsey. 3rd, Mr. W. IGGULDEN, Lock's Hill Nurseries, Frome, Somerset. Mr. HALL had magnificent flowers of Walter Jinks, A. Davis, Edith Smith (white), and Mme. P. Radaelli. In the 3rd prize exhibit was a fine example of the narrow petalled Mrs. Norman Davis (a white variety).

Reflexed varieties.—A class was provided for 12 large-flowered varieties of this type of Chrysanthemum, but only one grower exhibited, Mr. J. A. HUMPHRIES, and he was awarded the 1st prize. He showed among others King of the Crimsons, Chevalier Domage, Pink Christine, Hetty Dean (white), John Boxall (yellow), and Dorothy Oxberry (rose-pink).

AMATEURS.

Eighteen Japanese blooms, distinct.—The 1st prize was won by Mr. C. B. GABRIEL EARDALE, Horsell, Surrey, with a remarkably fine lot for an amateur, especially fine being J. H. Doyle, Mrs. F. Dalton, Lady Conyers, Mrs. A. T. Miller, F. S. Vallis, and R. Vallis. 2nd, Mr. J. A. HUMPHRIES (gr. to J. H. BURGESS, Esq., Maisey Hampton, Fairford), in whose stand there were nice blooms of Mrs. F. W. Vallis, Mrs. A. T. Miller, Mr. T. Carrington, A. Davis, Ethel Fitzroy, and others. 3rd, Mr. C. Hazell-grove (gr. to W. BRANDER, Esq., Sydenham Hill).

Twelve Japanese blooms, distinct.—Mr. C. B. GABRIEL EARDALE, Horsell, obtained the 1st prize with excellent blooms of Lady Conyers, Duchess of Sutherland, Reginald Vallis, and others. 2nd, Mr. J. A. HUMPHRIES, gardener,

Maisey Hampton. Mme. G. Rivol, Princess Brancova, and F. S. Vallis were among the best. 3rd, Mr. J. W. STEVENS (gr. to W. H. STONE, Esq., Donnington, Lawrie Park).

Twelve Incurred varieties, distinct.—The 1st prize was won by Mr. A. OSMOND (gr. to A. KEMPT, Esq., 15, Ross Road, South Norwood), with extremely nice, well developed blooms, the finer of which were Mrs. J. P. Bruce, Buttercup, Mrs. B. Hankey, Lady Isabel, and C. H. Curtis. 2nd, Mr. J. A. HUMPHRIES, gardener, Maisey Hampton, with good blooms, but not well chosen as regards size, the bigger ones being of extraordinary development, viz., Godfrey's Eclipse, Miss N. Hall, and Triomphe de Montbrun.

SECTION B.

TABLE DECORATION WITH CHRYSANTHEMUMS.

The 1st prize was awarded to Mr. H. L. SELL, Hampton Villa, Luton; effective, but too much crowded, although the design was adequate. 2nd, Mr. A. WILLIAMSON, East Street, Haslemere, with an arrangement that was exceedingly confused and overdone.

PLANTS (OPEN).

Six bush specimens.—These plants were shown in a few instances, and Mr. E. Houlton (gr. to J. GARDINER, Esq., Croxted House, Dulwich) was 1st with tall specimens carrying 12 blooms, one on each branch. The varieties were in all cases Japanese. 2nd, Mr. C. Bowyer (gr. to P. DAWSON, Esq., Marybourne, Lawrie Park, S.E.).

FIRST-CLASS CERTIFICATES.

The following new varieties were awarded the society's First-Class Certificate:—

W. J. Higgs (Incurred).—A large, somewhat irregular flower that will probably improve next season. The inside of the florets are a deep claret red, and this shows through, giving the flower a bronzy-claret colour. Shown by Mr. HIGGS, Leatherhead.

Geo. Mileham (Incurred-Japanese).—Another addition to the yellow Incurred-Japanese section; the colour is canary yellow. Shown by Mr. GEO. MILEHAM.

Freda Bedford (decorative).—This was shown as a pot plant; the specimen had eight medium-sized disbudded flowers of a deep apricot colour. Shown by Messrs. W. WELLS & Co., LTD.

Fellow's Favourite (market or decorative).—A medium-sized creamy-white variety. Shown by Mr. PHILLIP LADDS, Swanley.

E. Nottell (single).—A large flower of pale primrose-yellow.

Crown Jewel Improved (single).—This variety has commendable form. The flower is large and coloured terra-cotta which is tipped and suffused with gold.

Elsie Matthews (single).—A large, single variety of pale chestnut colour, and with a prominent yellow centre.

C. Robjant (single).—A variety of pale cinnamon-red colouring, with a yellow centre. These "singles" were from Mr. H. REDDENS, Manor House Gardens, West Wickham, Kent.

FRUITS AND VEGETABLES.

The schedule made provision for competitive classes of fruit, whilst Mr. Robert Sydenham, Birmingham, offered many monetary prizes, or the equivalent value in plate, for vegetables grown from his seeds. These vegetables made a big display, and some excellent produce was staged. In the Grape classes the best three bunches of a white Grape were Muscat of Alexandria, shown by Mr. J. G. WESTON, Eastwell Park Gardens, Kent; and the same exhibitor excelled in the class for six dishes of dessert Apples. Mr. LINTOTT, Marden Park Gardens, Caterham, was awarded the 1st prize for three bunches of black Grapes for well-grown examples of Black Alicante; and for three bunches of Gros Colmar the 1st prize was taken by Mr. Dunkley (gr. to HUGH KERR, Esq., Ardgowan, South Woodford).

NON-COMPETITIVE EXHIBITS.

Mr. H. J. JONES, Ryecroft Nursery, Lewisham, was awarded a large Gold Medal and the

"Simpson" Medal for a very imposing group, consisting of cut blooms arranged in bamboo stands and vases, these being widely placed so that the blooms might be seen from every side. The blooms, Japanese varieties mostly, were large of size, very varied in colour, and in good condition. Here and there were stood plants of Bamboo and specimens of hardy foliage; sprays of Asparagus were mixed with the blooms. The outer lines of the group consisted of cut blooms of Japanese varieties, and dwarf plants of single-flowered and other small Chrysanthemums.

A Gold Medal was awarded to Mr. W. J. GODFREY for a large amount of table space filled with Chrysanthemums in Japanese incurved, single-flowered, thread floreted, &c., varieties; a fine lot of blooms of the incurved yellow variety Buttercup, of Mrs. P. Laxton, Mary Mason, F. Gooding, W. Jinks, Melba, Miss Mary Pearce, Reginald Vallis, Miss Lily Baker, Mr. H. Hughes, &c. Of true incurveds we may name Viola, Godfrey's Eclipse, Marjorie Shield, and Frank Trestien.

Messrs. W. WELLS & CO., LTD., Merstham, Surrey, exhibited a large collection of Chrysanthemums of all types, including many large Japanese blooms and a few plants in pots. (Silver Gilt Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, exhibited Chrysanthemums, Zonal Pelargoniums, Celosias, Cannas, and a fine table of 175 dishes of distinct varieties of hardy fruits. The Chrysanthemums were principally large Japanese varieties, and these in a setting of autumnal foliage constituted an exhibit of high merit. (Large Gold Medal.)

Messrs. T. S. WARE, LTD., Ware's Nursery, Feltham, showed single Dahlias and Carnations tastefully arranged with coloured foliage, Asparagus sprays, &c. (Large Silver Medal.)

Messrs. JOHN FREED & SON, West Norwood, London, showed vases of Carnations, Begonias of the Gloire de Lorraine type, an effective group of Chrysanthemums, and an exhibit of hardy fruits. (Gold Medal.)

Messrs. J. LAING & SONS, Forest Hill Nurseries, S.E., arranged a small conical group of miscellaneous varieties of Chrysanthemums, and were awarded a Silver Gilt Medal.

Messrs. HOBBIES, LTD., Norfolk Nurseries, Dereham, staged a group of the more showy single and semi-double varieties of Chrysanthemums, such as Gaiety, Edith Pagram, Marie Gover, and Mary Richardson. A Gold Medal was awarded the exhibitors. This firm had a conical group of the large single-flowered Dahlias, of which Duke Henry is the type, and a pretty lot of Hybrid Tea Roses.

Messrs. W. SANDFORD, Hall Green Nurseries, Birmingham, were awarded a Silver Medal for a table of cut blooms of Chrysanthemums, set up in bamboo stands and vases. These consisted of semi-double and single-flowered varieties: Robert Milner (yellow), Pink Felicity (pink), and Mrs. Austen Chamberlain (pink, zoned with white), and many others.

Mr. P. LADDS, Nurseries, Swanley Junction, Kent, was awarded a Gold Medal for a big exhibit, consisting of Chrysanthemums, shown in groups of varieties of Japanese, large and small flowered.

Mr. J. COLE, Midland Road Nursery, Peterborough, received a Silver Medal for a table furnished with cut blooms of very fine Chrysanthemums.

A small Silver Medal was awarded to Mr. J. WILLIAMS, 4, Oxford, Ealing, for a variety of arrangements for displaying Chrysanthemums or other blooms in silvered stands.

The GOVERNMENT OF BRITISH COLUMBIA showed some magnificent Apples and Pears, the produce of that Colony. Apple Nonsuch is a remarkably handsome fruit, splendidly coloured, and fine in shape. Jonathan, Rome Beauty, and Grimes' Golden are other Apples of fine appearance. (Large Silver Medal.)

Mr. ROBERT SYDENHAM, Tenby Street, Birmingham, showed vegetables of very high merit, especially good being Lyon Leeks, Autumn Giant Cauliflower, Ailsa Craig Onions, and Hollow-Crown Parsnips. (Large Silver Medal.)

Mr. WILLIAM DANE, Hawkenbury, Tunbridge Wells, showed shrubs and Conifers. (Silver Medal.)

Mr. G. W. RILEY, Herne Hill, S.E., showed greenhouses and rustic summer houses, &c. (Silver Medal.)

Messrs. H. SCOTT & SONS, Woodside, South Norwood, S.E., exhibited rustic summer houses, garden seats, tables, barrows, kennels, and horticultural sundries. (Silver Gilt Medal.)

PORTSMOUTH CHRYSANTHEMUM.

OCTOBER 30, 31, & NOVEMBER 1.—The 21st exhibition was held on these dates in the Town Hall, the display being up to the standard of former shows, the entries as numerous, and the general quality as good. Cut blooms were, perhaps, the most prominent feature. In the class for 36 Japanese blooms, in not fewer than 18 varieties, four growers competed, valuable prizes being offered. The Dowager Lady ASHBURTON (gr. Mr. G. Hall, Melchet Court, Romsey, easily won the 1st prize with large, highly-coloured examples of popular varieties, of which the examples of Mrs. W. Knox, Melchet Beauty, Mme. P. Radaelli, Mme. M. de Mons, Mrs. R. Hooper Pearson, and F. S. Vallis were especially fine. 2nd, Mrs. OGILVIE, Rosecroft, Hambledon, Hants (gr. Mr. Dawes). Mr. HALL also won the premier prize in the class for 24 Japanese blooms, in not fewer than 16 varieties, with blooms similar to those in the larger class. PANTIA RALLI, Esq. (gr. Mr. G. H. Hunt), Ashted Park, Epsom, was 2nd in this class.

In the classes for Incurved blooms, the last-named exhibitor won the 1st prize for 24 blooms with an uneven set, though of good quality. For 12 Incurved Chrysanthemums, Mr. W. G. ADAMS, Southsea, was the most successful exhibitor. His dozen were the best Incurved flowers in the show, an especial quality being their neatness.

The various exhibits of Pompon varieties made a pretty display. In the class for 12 triplets of these flowers Mr. H. SNOOK, 5, Fitzroy Street, Finsbury, won the 1st prize. Single-flowered varieties produced a big display and proved an attraction. Mr. J. AGATE, Havant, was the most successful exhibitor of "singles" with a highly effective combination of choice varieties.

Plants were an important feature in the show. A class was provided for 12 specimen plants of Chrysanthemums, each with not fewer than 12 blooms on each. Mr. G. LAMBERT, Bognor Road, Chichester, was an easy 1st prize winner; several of his plants had more than 40 high-class blooms. The best group of Chrysanthemums was staged by Mr. Papworth, gardener to the PORTSMOUTH PARKS COMMITTEE. Mr. Papworth showed dwarf plants, all carrying good blooms, the stems well clothed with healthy leaves, and what was of equal importance, they were not overcrowded in their staging.

Miss MINNIE SNELLGROVE, London Road, Southampton, was a successful exhibitor in the decorative classes.

Displays of vegetables were meritorious. Mr. G. Ellwood, gardener to W. H. MYERS, Esq., Swanmore Park, Bishop's Waltham, won both the society's prize for nine, and Messrs. Sutton's for six kinds, with excellent displays. Mr. Ellwood also won the 1st prize in the class for two bunches of Black Grapes.

Among the non-competitive exhibits, Messrs. SUTTON & SONS, Reading, had a highly interesting exhibit of vegetables; and Messrs. DOBBIE & CO., Rothesay, showed 40 dishes of Onions. This was an exhibit of much merit.

CATALOGUES RECEIVED.

- HERD BROS., Penrith—Forest, ornamental, and fruit trees, &c.
JAMES COCKER & SONS, Roses, herbaceous plants, shrubs, fruit trees, &c.
W. DRUMMOND & SONS, Ltd., Stirling and Dublin.—Trees, shrubs and Roses.
W. and T. SAMSON, Kilmarnock—Forest and ornamental trees.

FOREIGN.

MESSRS. JULIUS ROEHRS CO., Rutherford, New Jersey, U.S.A.—Rose Newport Fairy.

Obituary.

JOHN ALLSOP.—The death of this well-known gardener, at the age of 66 years, occurred on Wednesday, October 30, at Roundhay, near Leeds, the residence of his son. For some time past deceased had not been in good health, though he was able to follow his duties at Dalton Holme Gardens until quite recently. A short time since he decided to consult a surgeon specialist at Leeds, and an operation was considered necessary. The operation was successful, but deceased was not strong enough to overcome its effects, and death resulted from heart failure. In 1872 the late Mr. Allsop entered the service of Lord Hotham: previously he had occupied the position of head gardener to the late Admiral Duncombe, at Kilnwick Percy, also situate in the East Riding of Yorkshire. Deceased was a native of Derbyshire, and began his gardening career as a boy in Mr. Godwin's nursery at Ashbourne. From that establishment he went to Longford Hall, the residence of the Hon. Mr. Cole, and later was foreman at Kedleston Hall, the seat of Lord Scarsdale, both places being in the county of Derby. After that he was gardener to Capt. Stewart, near Tamworth, for a few years, coming from thence to Yorkshire. Mr. Allsop excelled in fruit culture, both indoors and out, and also in landscape gardening. His services as a judge have for many years been in request at many of the principal exhibitions in the county of Yorkshire. A family of six sons, three of whom are gardeners, is left to mourn his loss. The eldest, William, is gardener to Lord Derwent, Hackness Hall, Scarborough; another, Arthur, is superintendent of the public parks at Leeds; and Walter, for some years gardener at Osberton Hall, Worksop, is now in business as a florist in Leeds. The interment took place on Saturday, 2nd inst., in the churchyard attached to the parish church of Dalton. Lord Hotham was present at the service, and at his request the whole of the employés on the estate attended also. *Yorkshire Gardener.*

J. ASSBEE.—As our pages are passing through the press, the regrettable news has reached us of the death of Mr. J. Ashbee on Wednesday evening, the 6th inst. Mr. Assbee, who was 68 years of age, has been superintendent of the Covent Garden market for about one quarter of a century, and he was familiar in horticultural circles, having been until his unfortunate death a member of the Executive Committee of the Royal Gardeners' Orphan Fund, Horticultural Club, &c.

DEBATING SOCIETIES.

REDHILL, REIGATE AND DISTRICT GARDENERS.—A meeting of this association was held on October 21. Mr. C. F. Walters, of Deandean Nurseries, Balcumb, Sussex, gave a paper on "The Introduction and Cultivation of the American Carnation." The lecturer cultivates 30,000 plants, and he gave his hearers some good practical hints from his own experience.

BRISTOL AND DISTRICT GARDENERS.—A meeting of this association was held, on Thursday, October 31, under the presidency of Mr. A. O. Shelton, vice-chairman. Mr. J. Pentland, representative of the Bath Society, gave a paper on "The Pleasures and Sorrows of Gardening." The lecturer was very optimistic in his views, having all pleasure and no sorrows to relate. Mr. Pentland said there was a reciprocity of feeling between the sympathetic gardener and his plants, that they would thrive in response to the attendant's care and kindness. But, to a less sympathetic man, he never so skilful and experienced, the plants fail to respond to his treatment. A competition in wreath-making for under gardeners, hardy flowers and foliage only to be used, resulted in Mr. Farley gaining the 1st prize. *H. W.*

SALISBURY AND DISTRICT GARDENERS.—At the weekly meeting of this society, held on October 30, a paper was read by Mr. W. Nandall, of Longford Gardens, on the cultivation of the Strawberry. Mr. T. Challis, V.M.H., presided over a large attendance of the members. The lecturer dealt in an exhaustive manner with the details, both for outside culture and for forcing. A good discussion ensued after the reading of the paper. *G. W. Tucker.*

READING AND DISTRICT GARDENERS.—A large attendance of the members assembled at the recent fortnightly meeting of the above association. The subject for the evening was "Sweet Peas," introduced by Mr. J. C. House, of Coombe, Bristol. The lecturer referred to the great popularity of the Sweet Pea as evidenced by the magnificent shows now held by the National Sweet Pea and other societies. Details on culture, including the preparation of the soil and position, chemical manures, mulching, watering, time of seed sowing, sowing in pots, thinning, staking, &c., were given, also a list of the best varieties in their respective colours.

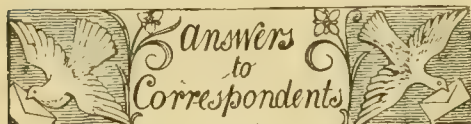
SCHEDULES RECEIVED.

LANCASTER AND DISTRICT HORTICULTURAL IMPROVEMENT ASSOCIATION'S Chrysanthemum show, to be held on Wednesday, November 13th, 1907. Hon. Sec. J. W. Pring, New Street, Lancaster.

BIRMINGHAM AND MIDLAND COUNTIES CHRYSANTHEMUM, FRUIT AND FLORICULTURAL SOCIETY'S 47th annual Chrysanthemum show, to be held in Bingley Hall, Birmingham, on Tuesday, Wednesday, and Thursday, November 12, 13, 14, 1907. Secretary, Alfred Noakes, 148, Bristol Street, Birmingham.

NEWCASTLE AND DISTRICT CHRYSANTHEMUM SOCIETY'S 9th annual exhibition to be held in the Town Hall and Corn Exchange, Newcastle, on November 20-21, 1907.

ALTERATION.—THE LIVERPOOL HORTICULTURAL ASSOCIATION'S Chrysanthemum and Fruit Show (Wednesday and Thursday, November 13 and 14, 1907).—Owing to the altered date of the Liverpool Assizes, this forthcoming show cannot be held in St. George's Hall. Arrangements have been made to hold the same in the Drill Hall, 204, Upper Warwick Street.



APPLE ROOTS: R. W. The roots are attacked by the white mycelium, which has evidently emanated from some buried stump or dead root, and so often alluded to in this journal as "root fungi." There is little hope of exterminating the pest unless you can clean the roots and disinfect the soil. We have frequently warned readers against planting fruit trees in soil containing dead wood, roots, or tree stumps.

BEGONIA GLOIRE DE LORRAINE: Avon. The bases of the stems are cankered, probably through over-watering or keeping the plant more than one year.

BULB MITE: J. E. The paragraph appeared in our issue for March 25, 1905, p. 185, and was taken from the March number of the *Journal of the Board of Agriculture* of that year. The measures recommended are: 1, to burn the affected bulbs; or 2, wash and spray every affected bulb with paraffin, repeating the operation after a fortnight; 3, wash the bulbs in sulphide of potassium (liver of sulphur), 1 oz. to 3 gallons of water; 4, fumigation with bisulphide of carbon. In order to do this, place the bulbs in an airtight receptacle, and on the top of the bulbs put a saucer of the bisulphide and let the bulbs remain in the vapour for 48 hours. It must be remembered that the vapour is poisonous and inflammable, so that no light of any description should be brought near the fluid.

CALCIUM CARBIDE REFUSE AS MANURE: F. B. This substance, after having been used for the preparation of acetylene gas, may be used on the soil in a similar manner and in about the same proportion as freshly slaked lime, the manurial values of each substance being approximately equivalent. Do not allow the substance to come into direct contact with vegetation, and if possible apply it when the land is lying fallow.

CHRYSANTHEMUM STEM DISEASED: W. S. & S. The black objects in the Chrysanthemum stem are the sclerotia, or resting bodies, of a fungus known as *Botrytis*. It belongs to the *Pezizas* or cup fungi. These objects, resembling mouse dung, are common in the pithy stems of many plants at this time of year. It is possible that the fungus may have appeared since the attacks of the insects, if you are sure that they have bored into the stem. The sclerotia are often preceded by a mould-like condition, which affects the leaves and stems.

CORDYLINE (DRACÆNA): J. K. The leaves appear to be attacked by a species of *Anthraxnose*, probably *Gloeosporium dracenicolum* (B. and Br.). All diseased leaves should be destroyed by burning, and the plants syringed with a weak solution of the Bordeaux mixture.

FUNGI: C. B. G. The fungi were received in a condition impossible to determine the species. All of them were nearly devoured by maggots, and mostly without perfect stems and rotten; 2, *Clitocybe cerussata*. The others cannot be determined.

GROUP OF MISCELLANEOUS PLANTS: H. M. The schedule definitely states that the group should be arranged on a space not exceeding 10 feet in diameter. It is peculiarly unfortunate that you should have been misguided by the person in charge of the arrangements, but in the face of the terms printed in the schedule the Committee may be right in their insistence that they should be carried out to the letter.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. Correspondents not answered in one issue are requested to be so good as to consult the following numbers.

FRUITS: W. W. 1. *Fondante d'Automne*; 2, Marie Louise.—E. W., *Shansted*. 1, *Fondante de Malines*; 2, *Beurré Diel*; 3, *Bergamot Esperen*; 4, *Conseiller de la Cour*; 5, Marie Louise; 6, *Beurré Bosc*.—T. S. F., *Apple*. In appearance the fruit is exactly like *Wealthy*, but is much too sour for that variety. We do not, therefore, recognise it. 1, *Beurré d'Hiver*; 2, *Beurré d'Amanlis*; 3 (rotten); 4, *Beurré Giffard*.

PLANTS: F. B. 1, *Codiaeum* (*Croton*) irregular; 2, *Codiaeum angustifolium maculatum*; 3, *Codiaeum volutum*; 4, *Curculigo recurvata*; 5, *Dracena marginata*; 6, *Dracena terminalis*.

V. A. 1, *Oncidium pratense*; 2, *Cypripedium Schlimii*; 3, *Palumbina candida*; 4, *Stelis muscifera*.—A. J. W., *Epsom*. *Cattleya elongata*, figured in the *Botanical Magazine*, t. 7543, and often grown in gardens as *Cattleya Alexandra*.—A. R., *Heathfield*. 1, *Cotoneaster frigida*; 2, *Rhamnus frangula*.—T. C. *Lycium chinense*, the Box Thorn, sometimes called the "Tea-plant."

PEACH ROOTS: L. F. The knots on the roots are not due to insects or fungi. They frequently appear on the roots of Raspberries, Plums, Apricots, Apples, and Pears. On cutting through one of the knots it becomes apparent that it consists of a number of adventitious buds. The woody part of the root is much enlarged, and one can easily trace small parenchymatous wedges arising from the medulla, being later transformed into real bud stalks. These buds, however, rarely develop leaves, but are suffocated every year; thus after a few years this growth results. As to the cause of this extraordinary development of buds, it must be said that it has been proved by experiment that these knots develop on places where roots are slightly bent, thus interfering with the normal flow of the sap, which is stowed in these places, and in consequence adventitious buds are formed. Thus in planting trees care should be taken not to break or bend any roots into an unnatural position. It is also known that loamy, clayey, and stony soils prevent the natural development of the roots and produce such knots. You have already done the best thing to prevent a recurrence of this injury by lifting the Peach trees and cutting away the injured portions, and by the supply of fresh soil. It is doubtful whether chlorosis is due to the knot-like growths. A deficiency of iron in the soil results in chlorosis, which is apparent in the yellow spotting you describe, but other causes which produce unhealthy root development, e.g., stagnation of water, may produce somewhat similar results.

PEARS: H. M. B. Your Pears are attacked by the brown rot (*Monilia fructigena*), which attacks Apples, Pears, Cherries, and Apricots (see *Fungoid Pests of Cultivated Plants*, p. 136, with figures). The methods hitherto recommended are to remove and burn all diseased fruits, and spray the trees with a solution of 4 lbs. of sulphate of iron in 5 or

6 gallons of water. It is a difficult disease to combat.

ROSES: T. N. Judging from your letter, it is probable that the cause of the stated varieties failing was mildew attacking the foliage in a very young state, consequently checking development and causing the leaves to fall. Some varieties are much more liable to attacks of mildew than others. A sharp look-out should be kept next spring, and directly mildew is suspected, the young growths should be freely dusted with flowers of sulphur, or the plants may be sprayed with sulphide of potassium, using half an ounce of sulphide to each gallon of soft water. We do not advise the removal from the bed of these established plants, which are all of good constitution, and should be capable of succeeding equally as well as the other kinds. You would do well, however, to delay the spring-pruning for a week or ten days longer than usual; the plants will then push vigorously into growth directly afterwards, and may be further encouraged by copious applications of diluted liquid manure water twice weekly throughout the season of growth. As the heat of the sun increases during the summer months, a surface mulching of cow manure would prove very beneficial. Such a check and failure of foliage as you have described is sometimes owing to the roots having penetrated deeply in search of moisture, and, in the case of beds not properly prepared, finding their way into a hard, inert, and altogether unsuitable subsoil. Your plants having recovered during September, leads us to the conclusion that they suffered earlier in the season from want of moisture at the roots. If you prefer lifting the plants, they would grow and flower well in a greenhouse, but it would be unwise to attempt to force them this season, it being necessary to have established, well-rooted plants for this purpose.

SCHOOL OF FORESTRY: S. S. A. The best is certainly that which has been established at the Oxford University. There is another at Bangor, North Wales, and lectures on forestry are delivered in connection with the Universities at Edinburgh and Aberdeen, also at the Armstrong College, Newcastle-on-Tyne. The *Journal of Forestry* is issued quarterly, at the price of two shillings, published by J. Davidson, Haydon Bridge. For the *Journal of the Royal Scottish Arboricultural Society* write to Mr. R. Galloway, 5, St. Andrew's Square, Edinburgh.

SEEDLING CARNATIONS: W. V., *Box Rd.* Both the pink and white varieties are very pretty and possess elegant form, but we do not think they are superior to existing varieties. Several novelties of high merit were certificated by the Royal Horticultural Society at the last meeting, a report of which appeared in our issue for last week.

SHANKING IN GRAPES: *Norfolk*. Nothing definite is known as to the direct cause of this common complaint of Grapes, although it is generally agreed that some check is indirectly responsible for the trouble. By most authorities it is agreed that an unsuitable rooting medium and over-cropping are two indirect causes of shanking. The border should be thoroughly overhauled and re-made with fresh loam with bonemeal and old lime rubble added, and every inducement made to encourage the roots to grow near to the surface. Improper treatment in the vinery, such as permitting cold draughts, practising careless watering, &c., will also cause shanking in the berries. Shanking is generally associated with, if not caused by, a fungus. This complaint is referred to in all the works on Grape culture.

SOLANUM LEAVES: *Constant Reader*. We can detect no fungi or other disease on the *Solanum* leaves sent. The spotting may have been caused by thrips.

COMMUNICATIONS RECEIVED.—G. W. B. (the sixpence has been placed in the R.G.O.F. box).—Irvine & Co.—A. Reader—A. Lear—G. R.—G. G.—J. D. G.—H. G. K.—R. B., Jr.—Tennis—J. W. A.—J. C.—W. E. B.—H. W. W.—W. H. C.—Lady P.—J. A. E.—J. D.—A. B. S.—J. J. W.—T. A.—H. G.—A. O.—R. P.—Yorkshire Gardener—C. H. P.—J. W.—W. H.—J. R.—A. M.—P. W.—J. Tindall—F. M.—F. W. P.—J. B.—W. G. F.—J. R. J.—A. C. B.—Owen T.—W. A. C.—R. T. H.—F. S. & S.—A. J. G.—Arthur W. S.—Northumberland H. S. Eigot—E. G. C.—A. B. H.—J. C.—C. L. L.—J. H.—C. G. P.—W. D. & Co.—C. P.—T. B.—J. O.—A. C.—A. D.—E. B.—Miss R.



THE

Gardeners' Chronicle

No. 1,090.—SATURDAY, November 16, 1907.

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EASTWELL PARK.

[SEE FIGURES 131, 132, AND 133, ALSO SUPPLEMENTARY ILLUSTRATION.]

THE gardens attached to the residence of H. J. King, Esq., at Eastwell Park are among the most interesting and important establishments in the county of Kent. They are not merely extensive, but contain features that in themselves are of unusual grandeur, the most dominant being the remarkable winter-garden, of which views are afforded in our supplementary illustration to this issue. This feature alone would be amply sufficient to attract numerous visitors to the place if Eastwell were situated in a more accessible district, for the nearest important railway station is Ashford, four miles distant. Ashford, however, being on the main railway line from London to Folkestone and Dover, may be reached in a reasonable time from Charing Cross. It is a small Kentish town, typical of the county, and parts of it, including the buildings, are undoubtedly of considerable age. Eastwell is also within driving distance from Canterbury, being 11 miles from that city, whilst Folkestone and the English Channel may be reached in 16 miles. The little village and church of Wye, and the Wye Agricultural College can be seen clearly enough on a bright day, for they are only two miles from

Eastwell village. The park includes about 1,500 acres of land, and its undulating ground furnishes beautiful and picturesque views. The prospect from the higher eminences ranges over the chalk downs of Kent, the plains of the Weald, the rich valleys of the Stour and Medway, the distant Thames on the one side and the English Channel on the other. Eastwell is noteworthy for its historical associations, as well as its beautiful park. It is mentioned in *Domesday*, and

ownership of Earls of Winchilsea, as it bears the Winchilsea arms. Subsequently the estate was purchased by the late Lord Gerard, and it was he who developed the gardens by building the conservatory and adding a number of valuable features at the expenditure of much capital. He was an enthusiastic gardener, and a most liberal patron of the art. On the death of Lord Gerard, the family removed to a smaller seat which they possess in Lancashire, and leased Eastwell



[Photograph by P. Ath.]

FIG. 131. THE ENTRANCE GATEWAY AT EASTWELL PARK.

was given by the Norman Conqueror to one of his adherents. Subsequently it passed into the possession of various families, including the Finches, Heneages, and, finally, the Earls of Winchilsea.

The late Earl of Winchilsea leased it to the Duke of Abercorn and, again, about 35 years ago, to the Duke of Edinburgh.

The handsome stone gateway built at the entrance to the park, and illustrated in fig. 131, was evidently erected during the

to H. J. King, Esq., the present tenant. The building itself is chiefly of modern date, but still includes portions that were erected in the reign of Queen Elizabeth. Generally, the appearance is not very imposing.

The south front of the residence may be seen in the photograph reproduced at fig. 132. A distance of about 1,000 feet intervenes between the point at which the photograph was taken and the house itself. The ground slopes gently upwards towards the house all the

way, and at about half the distance a low wall crosses the front forming a new level, which is approached by steps, as shown in the figure. The wall affords a very sheltered and sunny position for the cultivation of the less hardy flowering, climbing and trailing plants. Between this wall and the house is a first-class tennis court kept in the most excellent condition, and the front flower garden, which consists of about sixty distinct beds. At the time of our visit in July last these were gay with flowering plants of a miscellaneous character, the effect being of a pleasing nature. Proceeding towards the house, the conservatory, to which reference will be made presently, is attached to the building on the righthand side. On the

of the owner and consequent changes that were not foreseen. The result is one that presents an infinite puzzle to the present gardener with a desire to set the matter right. We walked amongst the shrubs, and there were choice varieties on every hand, but each had grown against and into the other, inasmuch that the outlines of none remained distinct. The first idea would be to commence thinning at once, but where and how? Every specimen is ill-shaped, and, if isolated, would be positively ugly! It is a disagreeable fact, but we fear the only manner in which a proper remedy could be applied would be in the total removal of portions at a time for the purpose of replanting.

The large trees at present in the pleasure

about 5 feet from the ground it has developed seven huge branches, six of them having grown erect, and the seventh, on the contrary, has extended outwards at a very considerable angle. The Rosary is one of the pleasantest portions in the grounds. It covers an area of two acres, and although it contains numerous beds and borders these are sufficiently large to prevent any appearance of triviality, as happens when many small beds are formed on an area that is insufficient to allow a good "setting" of lawn between them. In the centre there is an ironwork 10 or 12 feet in height and representing a crown, whilst at equal distances on either side are structures of a similar nature which represent coronets. These do not exhaust



FIG. 132.—EASTWELL PARK HOUSE, THE RESIDENCE OF H. J. KING, ESQ.

[Photography D'Ath.]

opposite side a broad shrubbery extends from the residence, at right-angles thereto, and separating the pleasure grounds from the park. In this area is one of those examples unfortunately so common in gardens, in which a liberal planting of choice shrubs is followed by an effect altogether incomparable with that which ought to have been obtained. In the first instance, the liberality of the owner provided a sufficiency of shrubs to afford a good effect immediately after the planting, the intention being, presumably, to thin them out as soon as the specimens required more room for proper development. But this was not done in this case, as in many others, owing to the decease

grounds are chiefly of deciduous species, notwithstanding some memorial trees of selected species were planted by distinguished persons during the tenancy of H.R.H. the Duke of Edinburgh. Many of the indigenous trees are finely-developed specimens that excited our admiration, for in their dimensions and age they are equally interesting, but the appearance from the house might be improved by the planting of evergreen species which are necessary to impart to the place a more furnished appearance in winter. We must particularise amongst the deciduous trees a very remarkable specimen of the common Horsechestnut (*Æsculus Hippocastanum*) with a bole 22 feet in circumference. At

the provision for rambling Roses, for there are numerous pillars with chains suspended from them that at the time of our visit were garlands of bloom. The gardener, Mr. J. G. Weston, cuts the rambling sorts quite to the ground each season directly they have flowered, and the plants are thus induced to make strong growths of great length from the base, which flower profusely in the following year. Many of the beds are planted exclusively with one variety of Rose for the purpose of presenting a patch of colour of the same shade. A noticeable circumstance in relation to the Rose-garden generally was that all the plants appeared to be unusually vigorous and therefore capable of flowering

the more abundantly. When any of them show signs of diminished strength, the plants in that particular bed are lifted and much of the old soil taken away to make room for more possessing a greater amount of plant-food and vegetable fibre. The Roses illustrated at fig. 133 are not cultivated in the Rose-garden, being in an adjacent part of the grounds. As seen in full bloom the arrangement shown in the figure has the appearance of a great bell composed of Roses. The device consists of fastening a number of wires in a ring at a point near to the ground and attaching the other end to the top of a central pillar or stake 12 feet in height, allowing each wire to hang very loosely. The variety illustrated is the popular *Félicité-Perpétue* and has small double white flowers.

Before turning our attention to the indoor department, mention should be made of several excellent borders of herbaceous and other flowering plants, which are among the best managed we have seen. There appeared an abundance of flowers everywhere, and Sweet Peas, among other species, were remarkable.

The kitchen garden consists of six acres of land, and it has been properly formed at the commencement, being divided into convenient plots and provided with proper paths. There are walls for the cultivation of fruit trees, and the whole garden is maintained in a high state of efficiency. Mr. Weston only removed to Eastwell from the Earl of Bessborough's garden near Piltown, in Ireland, 2½ years ago, but he has already planted bush Apples and Pears round the plots, trained fruit trees against the walls, and formed a separate garden for Currants, Gooseberries, Raspberries, &c., which is now entirely covered with netting as a protection against birds. The soil in the kitchen garden being of stiff loam, it is of a suitable nature for most kinds of hardy fruits. The kitchen garden is now being further enlarged by the enclosure of four acres of land.

THE GLASS HOUSES.

The finest of the glass structures are the winter-garden and the houses attached to it. Two views of the interior of these are reproduced in the supplementary illustration. The first one is directly attached to the dwelling-house, and is known as the "Winter Garden." From the opposite end of this there extends a corridor, which leads to the "long conservatory," built at right-angles to the corridor, and giving access to seven span-roofed plant houses. The dimensions of these structures are as follows:—*Winter Garden*: Height 40 feet, length 96 feet, width 63 feet. *Corridor*: Height 23 feet, length 52 feet, width 21 feet. *Conservatory*: Height 27 feet, length 160 feet, width 26 feet. The Winter Garden and conservatory are maintained as warm houses, and the corridor is somewhat cooler. The manner in which the houses are decorated with vegetation may be seen from the illustrations, but there are many fine specimen plants of Ferns and Palms, particularly in the conservatory, which are not shown. Provision exists for illuminating all these houses with electric light, and the excellent effect they are capable of affording may be imagined. Each of the seven plant houses to which allusion has already been made is 60 feet in length. They contained batches of plants of numerous species valuable for decorative purposes.

(To be continued.)

CHRYSANTHEMUM NOTES.

SINGLE CHRYSANTHEMUMS.

MANY of the newer varieties of the single-flowered Chrysanthemum are passing into the stage when size becomes a noticeable feature. The colouring in many has of late years been intensified, and the "singles" are certainly charming flowers for decorative work. In build there seems to be a tendency to encourage a light, long floret, instead of a short, stiff, flat one which characterised many of the earlier introductions. One of the most popular varieties is *Ladysmith*, and at Victoria Park, London, Mr. Moorman has an immense display of this very effective and free-flowering rosy-pink variety. At Finsbury Park, in the conservatory, there is a representative collection of "singles," and they form quite an interesting display amidst the greenery of the Palms and Ferns. There are so many now in cultivation that I can only mention a few of the most recent or the most

yellow centre. *Emile* has medium-sized flowers of a pale shade of rosy mauve, with yellow centre; the florets are narrow. *Bessie Payne* has a high centre and flat florets of a pretty shade of pinkish mauve. The variety is very free, and the flowers are effective. Among others noted in good form are *Edith Pagram*, *Emily Clibran*, *Merstham White*, *Acme*, *Ideal*, *Golden Fleece*, *Pink Beauty*, *Miss Mary Anderson*, and *Miss Annie Holden*. *C. Harman Payne*.

THE NEW WEIGHTS AND MEASURES REGULATIONS.

THE new Regulations issued by the Board of Trade under the Weights and Measures Act of 1904 have now come into force. The rules are too voluminous to quote in extenso, but the following extracts with reference to "dry measures of capacity" may prove of interest to members of the seed trade and others. The general effect of the Regulations is that nearly all weights and



[Photograph by D.A.M.]

FIG. 133. ROSE *FÉLICITÉ-PERPÉTUE* ON THE LAWN AT EASTWELL PARK.

attractive of those already known, which I have seen in good form this season. *Blushing Beauty* is a wonderful bloomer; the flowers are very large and coloured a delicate rosy blush, with a yellow centre. *Miss E. Partridge* is a neatly-built bloom of almost the same colour as *Ladysmith*; the florets are flat. *Derrydown* has very broad, flat florets, and in colour is a reddish shade of terracotta, with a yellow centre. *White Duchess* is a very free-flowering, pure white variety; the blooms are large and the florets flat and stiff. *Progress* is a very striking variety, of terracotta colour passing to golden yellow at the base of the florets. *Florence Adams* has very long florets folded over; they are white, shaded blush towards the extremities. *Mrs. E. Allen* has large flowers of rosy-amaranth shade and long, stiff florets. *Mr. J. Ferguson* is a sport from *Mary Anderson*; the flowers are pale pink, with white base and yellow centre. *Mary Richardson* has rich golden flowers, coloured a very warm shade of terracotta, with

measures will have to be re-tested and, in some cases, re-stamped by the Board of Trade inspectors.

EXAMINATION.

Dry measures of capacity shall be made of sheet-iron or steel, with or without nickel-plating, tinplate, brass, bronze, copper, nickel, aluminium, well-seasoned wood, or other material approved by the Board of Trade. Measures may be protected by galvanisation, or by other process approved by the Board of Trade.

Wooden measures turned from the solid or made of sappy wood shall not be stamped.

Measures of a half-bushel or upwards shall be provided with handles.

All dry measures of capacity, of a bushel and under, shall be of circular cylindrical form, and the internal diameter shall not differ by more than 5 per cent. from the depth or double the depth.

Measures made of wood of the capacity of a

gallon and upwards, shall be bound or strengthened with metal or wooden straps or hoops, except when made of wicker or similar open material. A metal band shall be placed round the rim of all wooden measures of the capacity of a peck and upwards.

Every measure shall have its denomination clearly, permanently, and legibly marked upon the outside of the body thereof, and not upon the handle, bottom, rim, or edges; and on a glass measure, in which the capacity is defined by a line, the denomination of the measure shall be plainly marked at the line. On an enamelled metal measure, the denomination shall be marked in a distinctly different colour from that of the body of the measure. In the case of a measure made of sheet metal, the denomination shall be marked on a slip of tin, or on a shield (e.g., of sheet brass), securely soldered on the measure, with a small piece of tin or solder securely fixed thereto for receiving the stamp. On a wooden measure the denomination shall be branded.

Measures made of wicker or similar open material shall have the denomination marked on a suitable brass tablet or plate, fastened to the measure by means of a copper wire, or branded on a tablet of wood securely worked into the side of the measure.

No measure shall be stamped which is constructed to contain more than one denomination of measure, unless of a pattern approved by the Board of Trade under Section 6 of the Weights and Measures Act, 1904.

VERIFICATION.

Every dry measure of capacity, not being a measure made of wicker or other open material, shall be tested either with water or in the following manner with rape seed:—

(a) The standard shall be filled with seed passed through a hopper, a distance of 6 inches being left between the bottom of the hopper and the top of the local standard.

(b) All the seed contained in the standard shall then be replaced in the hopper, and thence run from the hopper into the measure under verification, which shall be placed so that the same distance of 6 inches intervene between the bottom of the hopper and the top of the measure.

Measures made of wicker or other open material shall be tested by means of cereals of the smallest size practicable.

The errors permissible on the verification of Imperial dry measures of capacity are:—

Denomination.	Error in excess only.
4 bushels	1 pint 35 cubic inches approx.
1 bushel	1 pint 17½ " " "
1 peck	1 pint 17½ " " "
1 gallon	1 pint 13 " " "
1 quart	1 pint 13 " " "
1 pint	1 pint 2 " " "
1/2 pint	1 pint 1 " " "

INSPECTION.

The instructions to the Board of Trade inspectors include the following:—Under the Weights and Measures Acts, every weight or measure for use in trade must be of the denomination of a Board of Trade standard, and all weights, measures, and weighing instruments for use in trade must be stamped by an inspector.

The limits of variation of the diameters of dry measures in relation to the depth are, in certain cases, as follows:—

Capacity.	Diameter equal to depth.		Diameter double the depth.	
	Standard capacity (diameter).	Allowable limit (diameter).	Standard capacity (diameter).	Allowable limit (diameter).
Bushel	14.14	13.43 to 14.85	17.81	16.92 to 18.70
Half-bushel	11.22	10.66 to 11.78	14.14	13.43 to 14.85
Peck	8.91	8.46 to 9.36	11.22	10.66 to 11.78
Gallon	7.07	6.72 to 7.42	8.91	8.46 to 9.36
Half-gallon	5.61	5.33 to 5.89	7.07	6.72 to 7.42
Quart	4.45	4.23 to 4.67	5.61	5.33 to 5.89
Pint	3.54	3.36 to 3.72	4.45	4.23 to 4.67
Half-pint	2.81	2.67 to 2.95	3.54	3.36 to 3.72

H. M. V.

GREEN COLOUR IN PLANT FOLIAGE.

ALL who are accustomed to observe vegetation must have been struck with the great variety of shades of green which the foliage of different plants presents.

It may also be noticed that the same description of plant will exhibit very characteristic differences, not only at different stages of growth, but at the same stage in different conditions of luxuriance as affected by the external conditions of soil, season, and manuring, but especially under the influence of different conditions as to manure.

From some researches made at the Rothamsted Experimental Station on this subject, it was found that the green chlorophyll formation in plants has a close connection with the amount of nitrogen assimilated, but that the carbon assimilation is not in proportion to the chlorophyll formed.

Further, it has been found that the presence in the soil of certain mineral or ash constituents, and especially that of potash, is essential for the assimilation of carbon, no starch being formed in the grains of chlorophyll without the aid of the element potash.

collected each received nitrogen in the form of farmyard dung, rape cake, and sulphate of ammonia. In addition, one plot received sulphate of potash at the rate of 500 lb. per acre, while the other plot received no potash. The illustration speaks for itself of the great value of potash for the Mangold crop, which is very dependent on an abundant supply of available potash.

It is characteristic of the various descriptions of feeding roots that they supply to the consuming animal a large amount of the non-nitrogenous respiratory and fat-forming substance, namely, sugar.

GROWTH OF POTATOS.

The Rothamsted experiments on the growth of Potatoes have still further shown that the high proportion of chlorophyll in the haulms and foliage of the Potato plant increases with the nitrogen content of the tubers. The more nitrogen found in the juice of the Potato tuber, the more undeveloped the tubers will be and the darker green will be the foliage.

As root crops are essentially sugar-yielding crops and their feeding value for livestock depends upon the proportion of matured sugar in the roots, so the Potato is essentially a starch-



FIG. 134. EXPERIMENT SHOWING THE EFFECTS OF POTASH MANURES ON LEAF-GROWTH.

GROWTH OF MANGOLDS.

In the experiments at Rothamsted with Mangel Wurzel the effect of potash and of the other saline manures is plainly visible in the appearance of the growing plants themselves. On the plots of land receiving potash in the manure the plants begin to ripen early in the season, the leaves turn yellow and become flaccid, so that in the month of October these plots may be seen outlined from the rest by their lighter green tint at any distance from which the field can be viewed.

On the contrary, the plots of land receiving no potash show all the signs indicating an excess of nitrogen in the foliage by the premature death of the outer leaves and the dark green, curled, and unhealthy appearance of the remaining tufts of small crown leaves, which show no signs of completing their growth however prolonged the season may be. This fact is strikingly shown in the following photograph reproduced at fig. 134.

The two plots from which these plants were

yielding crop, and its cooking quality, as also its nutritive value, depends to a very large extent upon the percentage of starch in the tubers.

The Rothamsted experiments show that, provided a liberal supply of potash is available in the soil, the produce of both sugar and starch is correspondingly increased by the amount of nitrogen taken up by the plant, the ingredient potash acting as a carrier of nitric acid from the soil to the plant.

In the presence of a sufficient supply of potash the deep green colour of the foliage disappears, and an abundance of carbo-hydrates—sugar or starch—is deposited in the roots or tubers, the reproductive organs of the different plants.

But if potash has been exhausted from the soil, then the foliage of both root crops and Potatoes remains of a dark green colour, and the non-albuminoid substances of the roots or tubers will be found chiefly as amides, and the nutritive quality will be considerably lessened.

J. J. Willis.

THE PROPAGATOR.

LAYERING EVERGREEN AND DECIDUOUS PLANTS.

WE are entering the season in which the propagation of plants by means of cuttings out-of-doors has, with few exceptions, to be postponed for a period of time—that is, till growth recommences in the spring and vegetation feels the influence of increasing solar warmth.

There are, however, certain evergreen and deciduous plants that may be layered whilst the weather keeps open, viz., Phillyrea, Laurustinus, Alaternus, Aucuba, Magnolia, Bignonia, Ceanothus, Cercis, Clethra, all species of Cornus, Cotoneaster, Cydonia, Cytisus, Deutzia, Hamamelis (lays two years), Laurus (two years), Morus, Myrica, Ornus, Platanus, Rhododendron, Rhus (many species), Rosa, Rubus, Ribes, Sophora japonica, such Spiræas as form roots readily from cuttings, Tilia, Ulex, Ulmus, Vinca, Vitis, Wistaria, and many more, but the foregoing are common garden plants. Scarcely any of those enumerated fail to make roots the second year, whilst most will be sufficiently rooted by the following autumn to be safely detached and planted in nursery lines in the reserve garden, or potted, if that method be preferred or called for. It should be noted that layers of tree-like plants have the peculiarity of assuming a shrubby habit and character. All shrubs and trees which permit of increase by means of cuttings make plants the more surely when layered, and some can only be increased vegetatively by layering, as, for example, Magnolia, Berberis, Crataegus, Mahonia, and Corylus. The most suitable shoots or branches for forming layers are those near the ground level, or which spring from the collar of the plant, and when such are not available or present the plant should be compelled to push forth such shoots by hard heading back. Another method of obtaining the desired layers from tall plants is to excavate the soil beneath them, bend the stems to the soil, and fasten them by strong wooden hooks, so as to bring suitable shoots low enough for the purpose. The shoots must be laid 2, 3, or 4 inches deep in the soil and be fixed therein. Cover them with soil 2 inches deep, and over all place a layer of leafmould, Fir needles, or Moss, so as to retain moisture round about the layers. The tips of the layers should, with a few exceptions, range above the covering of soil, &c., and remain in an oblique position. In the case of Rubus, the shoot should be left free, and the point only layered.

The shoots, previously to layering them, should be variously prepared. They may be half-cut through under a joint; a slight cut may be made in the rind and wood on the lower side of the shoots, and the latter twisted two-thirds or more round at that point, so that the rind bursts; or the shoots may be treated as are Carnation layers. The shoots of hard-wooded trees and shrubs, which make roots with difficulty, should be "ringed" above and under an eye or bud, that is, a small ring of bark should be excised not deeper than the cambium layer. Another method is to fasten a bit of wire tightly under an eye, and deeply into the rind; or the operator cuts a notch down to the centre of the shoot, either on the under side, or alternately under and over, by which the base of every bud will be compelled to push forth roots. These various operations of incising the bark have the purpose of causing the ascending sap to be arrested and form a callus at these points, and later to emit roots. Those species which grow most readily from the young wood can be layered as soon as the shoots are sufficiently matured—some species so early as the month of June; and others which succeed best with the old wood should be layered in the spring just before the leaves are put forth. The species of Rubus should have the growing points layered in the month of August. Layers of plants which

make roots quickly should be left undisturbed till the new growth is ripe, and, should but few roots have been made, the layers should be notched to two-thirds of their diameter, and taken up at the end of the next year. It is advisable in all cases to take up the rooted layers the first spring, so that the more tender species may be afforded better protection against frost by being planted out properly, and afforded a covering the following winter.

Layers which take two or three years to form roots should be similarly detached and planted in the second or third year. The layering work described above may be even better carried out in September and October and earlier, as at this season. F. M.

A NEW GOOSEBERRY DISEASE.

IN the early summer of 1906 Gooseberry bushes in Worcestershire were found to be suffering from some disease that caused the leaves to fall off prematurely. An examination of the branches showed that they were dotted all over with the fruits of a fungus belonging to Coniothyrium. The fungus develops in the cortex, and the minute black points where it pierces the outer layer are plainly visible with a hand lens. It grows in the form of a hollow sphere, inside which are borne small brown spores. The occurrence of the disease at this stage, and of the fungus, which had not been previously recorded for this county, were notified in the *Transactions*

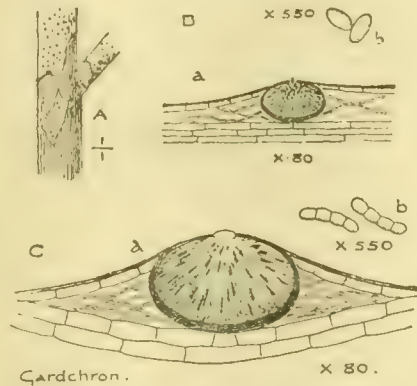


FIG. 135. A NEW GOOSEBERRY DISEASE.

A, portion of a gooseberry shoot affected with Coniothyrium; B, section through a conical fruit of Coniothyrium vagabundum; C, section through the fructification of Leptosphaeria vagabunda; b, spores highly magnified.

of the *British Mycological Society*, 1906, p. 168, under the name *C. ribicolum*, now proved to be synonymous with *C. vagabundum*. The bushes were kept under observation, and the following season the further and more developed fruiting stage of the fungus was found. This had been considered as a species of *Leptosphaeria*, a genus very similar in appearance to *Coniothyrium*, but believed to be distinct on account of the dissimilarity between its spores and those of a typical *Coniothyrium*. The disease was reported by Mr. Carleton Rea (who had first observed it) to be doing great damage in gardens near Worcester.

In August of this year bushes similarly attacked were found in a garden at Annan, Dumfriesshire. The branches of a number of bushes growing in the same plot of ground were entirely denuded of leaves, though a few ripening berries were still hanging on the twigs. The fungus in both the *Coniothyrium* and *Leptosphaeria* stages covered the affected branches with innumerable black points, and the cortex was found to be full of the mycelium of the fungus. No other gardens in the same neighbourhood were known to have suffered. The disease is still under observation. Probably early and vigorous pruning and burning of the diseased branches would suffice to stamp out the fungus. The associated *Coniothyrium* and *Leptosphaeria* are both re-

corded from the Continent as parasites on living Ribes and other plants, and do not seem, so far, to have proved very hurtful; but it is not an unusual experience to find a comparatively harmless parasite develop, under somewhat different conditions, until it is a serious pest. A. Lorrain Smith.

NOTICES OF BOOKS.

*THE WILD AND CULTIVATED COTTON PLANTS OF THE WORLD.

COTTON, one of if not the most important commercial product of to-day, is obtained entirely from plants of the genus *Gossypium*, closely allied to the familiar Hollyhocks of our gardens. The use of Cotton has been known from time immemorial, although, curiously enough, it is only within comparatively modern times that cotton fabrics have ousted those of linen, wool, and silk from their former positions. For such ages has Cotton been cultivated that, in common with several other plants of great economic importance, that its origin is lost in obscurity. Linnæus founded some five or six species of *Gossypium* from cultivated plants, and it has been almost generally held that there were no wild members of the genus. Subsequent attempts at the classification of the group have resulted in great diversity of opinion, some authors proposing the reduction of all the forms to one species, whilst, e.g., Todaro in his classical work recognises 54. Sir George Watt, during his long residence in India, took a great interest in the problem, and has given us the benefit of his work in this handsome volume, which, with its wealth of beautifully coloured and other plates, its exhaustive references to type specimens, and its full critical discussions of the botanical origin of the commercial Cottons of the world, should be carefully studied by all interested in the botany and economics of the group.

As an indication of the complexity of the subject, a single case, the origin of American upland Cotton—the "bread and cheese" Cotton of Lancashire—must suffice. Formerly generally referred to as *G. herbaceum*, it has more recently been recognised as *G. hirsutum*, many regarding these names as synonyms. Sir G. Watt traces the introduction, first of the Levantine *G. herbaceum* into America, and later, in 1734, through the agency of that great English gardener Miller, of the Physic Garden, Chelsea, of the Mexican *G. hirsutum*. Another introduction, *G. mexicanum*, played an important part, and by hybridisation principally between the two latter stocks the present varieties of American upland were apparently evolved.

The Cottons afford a standard example of the value of plant breeding work, inasmuch as we now have the greater portion of the world's crop produced in a country, the U.S.A., beyond the limits of the geographical distribution of the genus, and from plants which have been converted from perennials into annuals. Sir George Watt summarises the practical results achieved in various parts of the world, and the best means of attaining such improved races; and for these reasons combined with the generalisation formulated from geographical considerations his work should be of great interest to the large band of workers engaged throughout the world in endeavouring to improve the local races of Cotton. Author and publisher alike are to be congratulated on the production of this important contribution to our knowledge of a group of plants most difficult from the standpoint of the botanist, and at the same time from its overwhelming importance to man. It is evident that no means should be neglected to enable us to enlarge our area of supply as well as to improve the quality of the produce from existing areas. W. G. F.

* By Sir George Watt, C.I.E., M.B., & F.R.S., London, Green & Co., 1907. 30s.

SOME NEW OR RARE HERBACEOUS PLANTS.

WITHIN recent years the number of good herbaceous plants has considerably increased, and we are able to select from a large number of new species and varieties for material wherewith to fill our borders. At this period of the year it is especially to the Compositæ that we look to supply us with beautiful flowers, and some of the new sorts, though introduced with no flourish of trumpets, yet are deserving of attention.

In my garden at Floraire I have a specimen of *HELIANTHUS CILIARIS*, D.C., which is a source of great pleasure. It is a Mexican plant, and was described by De Candolle in 1836 in *The Prodromus*,* but it has not yet, as far as I know, found its way into cultivation. It forms large clumps, which increase by runners, and is of a glaucous colour, with narrow, sinuate, and opposite leaves. The stems, about 2 feet in height, bear large heads of golden ligulate florets surrounding the discs of brown ones, from which the orange-coloured anthers protrude. The plant blossoms from July to December, is perfectly hardy, and requires no protection from frost. I grow it in a well-drained soil, exposed to the full sunshine.

Another good plant which is rarely met with is *SILPHIUM ALBIFLORUM*, A. Gray. The leaves are deeply lobed and rough; the stems are thick and prickly, and attain to a height of about 3 feet. The whole of the upper part is covered with large, sessile heads of greyish-white flowers enclosed in spiny involucre, which give the plant a strange appearance. This rare and beautiful plant occurs in Texas, and needs a sunny and dry spot. *Silphium desiccum* Poir and *S. laciniatum* A. are plants possessing fleshy leaves, but their flowering stems reach a height of 10 feet, and are crowned with yellow capitula. *S. terabinthinaceum* L., bears enormous leaves, measuring sometimes as much as 2 feet long by 1½ feet in width, and the yellow flower-heads are arrayed in spreading panicles about 7 feet from the ground.

ASTER SERICEUS.

At the present time we have a suffrutescent Aster which is flowering for the first time. It bears downy, silvery leaves, and the slender, almost woody, stems are bending beneath the weight of the reddish-violet blossoms. This plant, *Aster sericeus* vent (= *argenteus* Michx.), of Texas and Illinois, was figured in *The Garden and Forest*, October 5, 1902, and flowers freely during the months of September and October.

BRICKELLIA GRANDIFLORA, Nutt., resembles a yellow Ageratum, the flowering heads of which are pendulous. It is a curious and pretty plant, a native of California, and its flowering period lasts from August to winter.

BERKHEYA PURPUREA, Benth. and Hook.

This is a South African plant, and one of the most beautiful of the Compositæ. The leaves are like those of a Thistle, and grow upon winged and prickly stems. The large capitula are white, with very beautiful purple centres.

Turning to other families of plants, I may mention

DRACOCEPHALUM HETEROPHYLLUM, Benth., one of the habiate, a native of Turkestan and the Himalayas. It is of dwarf habit, and is very effective with its spikes of large, white flowers rising 6 or 8 inches above the green carpet of foliage. It appears to be quite hardy, and the plants, which flowered this year at Floraire, received no protection during the previous winter.

SALVIA PRZEWALSKYI, Maxim., from Western China, is now (October) in full bloom. It is a strong and vigorous plant, the stems of which are thickly covered with leaves and reach a height of 3 or 4 feet. The violet-blue spikes of flowers are very effective, and their remarkable size, added to their beautiful colour, renders the plant a very valuable one from the decorative standpoint.

SALVIA SCABIOSÆFOLIA LAM.

Seeds of this plant were received from the mountains of the Taurus, and the plants have been in blossom from June to the present time, and they are still covered with as yet unopened buds. The *Index Kewensis* describes that this species is a native of Peru, but I received mine from the Taurus, and Borrier declares that it is indigenous to the limestone hills of that region. The plant forms clumps, and the numerous stems bear pinnatifid leaves recalling those of a Scabious or a Knautia, whilst the flowers are large and are borne in long verticillate spikes. Some years ago the Director of the Botanic Gardens at Tiflis in the Caucasus published an account of a number of new species from the East in *The Moniteur du Jardin Botanique de Tiflis*, and he was good enough to send seeds to Floraire. Many of the plants have flowered this year, especially a number of the mountainous species, which, however, hardly belong to the category of herbaceous plants. One of them, however, deserves notice, although it is not new, having been described by Borrier some time ago. The plant in question,

CAMPANULA PHYTIDOCALIX, BOIN.

has not, so far as I am aware, been introduced into cultivation before. At first sight it resembles *C. persicifolia*, but it is really quite distinct, and far more beautiful. It was figured in the *Moniteur* in 1905, and seed was distributed from Tiflis the same year. When this distinguished botanist visited me this year he expressed surprise at the size of the flowers, which, under cultivation, considerably exceed those of the wild plant. The stem is about 2 feet high, and bears long spikes of lilac-blue flowers, with large and widely-expanded corollas. It inhabits the Alpine regions of Kurdistan and Central Armenia. It is of easy cultivation, requiring a light soil and partial shade. *Henry Correvon, Geneva.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Phalænopsis.—At the present time several species of *Phalænopsis*, including *P. Aphrodite*, *P. amabilis*, *P. Sanderiana*, *P. Schilleriana*, and *P. Stuartiana*, are now developing their flower-spikes, and for several months to come the plants must all be watered with great care. Copious applications, whether by dipping or other means, will not be needed. At the same time, it is not advisable to allow them to remain dry at the roots for long together. It is a better practice to examine the plants more frequently than usual, and, whenever the compost is dry, to lightly sprinkle the sphagnum-moss and the sides of the basket to which the majority of the roots cling; this may be done conveniently by means of a fine sprayer. Water should not be allowed to remain in the centre of the plant or in the axils of the leaves, as "spotting" is frequently brought about by such negligence. All of the *Phalænopsis* are extremely free-flowering in habit; even very small plants will produce flowers. It is not advisable to remove the flower-spikes if the plants are healthy with the object of getting them more quickly into larger specimens, because other spikes will appear, and eventually from the centre of the plant, which is detrimental to the formation of new leaves. It is far better to allow a few flowers to open, and then cut the spike as close into the growth as possible, afterwards keeping the plant in a resting condition until the growing season commences. Specimens which have long flower-spikes should be lowered, so that the spikes are a foot or more from the roof glass, as sometimes the cold air, which passes between the laps in the glass, will cause the point of the spike to become black and decay; in such cases the remaining part of the spike will produce large blooms, but the general effect of the inflorescence will be unsatisfactory. During the winter keep the plants in a light position, but one that is not exposed to direct sunshine, especially such tender, green-leaved varieties as *P. Luddemania*, *P. rosea*, *P. violacea*, *P. sumatrana*, *P. Mariæ*, *P. speciosa*, *P. tetraspis*, *P. denticu-*

lata, &c. In mild weather let the atmospheric temperature of the house be kept at about 65° at night, and allow it to fall several degrees by morning. On very cold nights, when extra fire heat becomes necessary, a few degrees less warmth will suffice. The immediate surroundings of the plants should be damped down both morning and afternoon, but the quantity of water thrown about should be regulated according to the external temperature, and for several hours during the middle of the day the atmosphere should be comparatively dry, thus allowing the plants to discharge superfluous moisture. *Phalænopsis* do not thrive in a close, stuffy atmosphere for long together: they like fresh air, but it must be afforded in such a manner that cold draughts will be prevented. The *Phalænopsis* at Burford are cultivated in a house having a lean-to roof with a westerly aspect, and the top ventilators are more or less always open, according to the direction of the wind and other external conditions. Even during very cold weather a "chink" of air is left on at night as well as by day. The lower ventilators are never opened, thus the prevention of draught is assured, and a suitable growing atmosphere is easily maintained. Under such conditions, thrip insects rarely attack the plants, but the leaves should be lightly sponged over occasionally to free them from all dirt and dust, cleanliness being of great assistance towards successful cultivation.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. Ford, Pencarrow, Cornwall.

The herbaceous border (continued).—Before replanting any subject in the same spot a fairly large hole should be dug with the object of replacing the spent soil with fresh. A common fault is to overcrowd the border with large masses of tall, broad-habited plants, and, although those named on p. 327, together with others, such as the Oriental Poppies, *Pæonies*, &c., are undoubtedly very beautiful and showy during their seasons of flowering, their excessive employment leads to grave defects. The capacity of the border is, at the most, limited, and if the major portion of it is occupied with varieties of plants which are at their best during the summer months, not only does this leave a small amount of space in which to cultivate spring-flowering, and, even more important, late autumn-flowering plants, but the blanks left, when these erstwhile "masses of flower" have passed away and the ripened foliage has been cleared off, are unsightly. Even though, as was advised in an earlier calendar, much may be done to obviate this by the judicious employment of prepared annual plants carefully lifted and planted close around the crowns of the permanent occupants which have finished flowering, yet this is a somewhat expensive method, and, at the best, a makeshift. The aim of the gardener should be to render the herbaceous border bright and attractive during the dull season. The garden is in the early part of the year fairly bright with flowers of the spring-flowering bulbs. But, to keep the border even moderately well furnished and presentable from the first real frost to the advent of the Snowdrop and Crocus is a matter of some difficulty. With this end in view, the taller, early summer-flowering deciduous plants should be planted well at the back of the border, employing the evergreen subjects in the middle and front portions. A few evergreen shrubs of moderate size and good shape, such as Rosemary, Lavender, shrubby Veronics (in gardens where they are hardy), and an occasional Yucca planted a little to the back from the middle of the border, are useful. Along the front, Pinks, Arabis, Aubrietia, Campanula, &c., should be planted, but in fair-sized patches, and not in rigid lines, as is often seen. Strict gradations of size, running from the tallest plant at the back to dwarf ones in the front of the border, should be avoided. Although in general this must be done, yet the front portion should have an occasional plant somewhat taller than its fellows. Those selected for this purpose should not be dense-growing subjects, but rather those of a slender habit, such as *Campanula pyramidalis*, Foxgloves, Phloxes, Michaelmas Daisies of a moderate size, and bulbous plants, including *Galtonia candicans*, *Gladiolus*, &c.

* *Prodromus*, vol. vi., p. 587.

† *Flora orientalis*, vol. iv., p. 600.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq.,
Eastwell Park, Kent.

Euphorbia (Poinsettia) pulcherrima.—These plants are now forming their handsomely-coloured bracts, and should be assisted by applications of diluted stimulants and the affording of a rather warmer atmosphere than formerly, which is necessary to encourage the bracts to obtain their full development. A minimum temperature of 65° at night will be found suitable and it may be allowed to rise 10° to 15° during sunny days. Admit a little air on all favourable occasions but on no account allow draughts of cold air to reach the plants. Syringe them lightly overhead on bright days at the time of closing the house in the afternoon. When the bracts have fully developed, reduce the atmospheric moisture and high temperature by slow degrees, so that the plants will become sufficiently hardened for use for indoor decoration if required. For this purpose *Euphorbias* are much in demand at Christmas-time, their brilliant crimson heads showing to great advantage by artificial light, and with Palms and with a few white flowering plants providing a fine effect.

Euphorbia jacquiniæflora.—This species is very beautiful, and is much appreciated for the making of sprays and other decorative devices, for which its long slender growths render it peculiarly suitable. These plants are also showing their flower buds, and should be kept in a hot atmosphere. Let water be afforded cautiously, as these plants have very fine roots which are impatient of much water at any season; over-watering soon causes some leaves to fall, and eventually the plant may die.

Coleus thyrsoides.—Keep the plants of this flowering species arranged thinly and well up to the glass, or they will become drawn and weakened and will not flower so well. This species has a very free root-system, and should be afforded weak stimulants at intervals as appear to be necessary, to assist in the development of the flower-spikes. Where blue flowers are admired, this plant is a welcome feature in the flowering house or conservatory; it is capable of lasting a long time if the cultural conditions are kept suitable, but the flowers are of very little use for cutting, and the colour is ineffective under artificial light.

Moschosma riparium is a good plant for associating with the *Coleus*, and at this season thrives under similar treatment. Keep the atmosphere of the house at a temperature of 55° to 60° at night, according to the weather, allowing it to rise to 65° or 70° in the daytime.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq.,
Norwood, Alloa, Clackmannanshire.

Pineapples.—Plants now swelling their fruit, such as the variety Smooth Cayenne and others that fruit in winter, should be afforded a warm, moist atmosphere. Do not syringe them at this dull season of the year. The damping of the paths three times a day will be quite sufficient to maintain a moist atmosphere. During the time the fruit is colouring, the roots only require very little water. Maintain a steady atmospheric temperature of 70° to 75° at night, allowing it to rise to 80° by day; the bottom heat may be 80°. It is advisable to have a covering to place over the Pine pits during severe frost; such protection will help considerably in preventing the heat of the pit decreasing, and it will to some extent prevent the use of an excessive amount of fire heat.

Pines for fruiting early next year.—Plants which are to be started at the commencement of the new year should be kept at present in an atmospheric temperature of about 65° at night, and a bottom heat of 70°. During mild weather admit air to keep down the heat of the pit below 70°, and do not afford the roots more water than is necessary to keep the plants from flagging; the plants should now be resting.

Pine suckers, which were potted into 6-inch pots early in autumn, will now be well rooted, and should have a temperature at night of 60°, allowing a rise of 5° by day and a bottom heat of 70°. Keep the atmosphere of the pit humid, and do not allow the plants to suffer for want of water; at the same time, remember the caution never to apply water to a plant that is not in a condition requiring further moisture.

Being plunged in fermenting materials they do not often require water at this season. Detach any suckers from old plants, and pot them firmly in fibrous loam, using 6-inch pots, which should afterwards be plunged in a bottom heat of 70°.

Peaches.—Late varieties, such as Golden Eagle, Sea Eagle, and Princess of Wales, being now cleared of their fruit, should be syringed thoroughly once each day. Examine the trees now, and cut out any gross shoots and any that may be considered undesirable for next year. Admit an abundance of air, and apply some fire-heat to induce the wood to "ripen." When the leaves have fallen, the fire-heat may be discontinued, and the houses be kept as cool as it is possible to keep them. Young Peach and Nectarine trees which have grown too strongly will now require to be lifted, have their roots pruned and be re-planted, unless this operation was done in October. It is advisable to add a good quantity of lime rubble to the border when planting or transplanting young and gross-growing trees. Strong manure should not be mixed in the compost. Make all the borders very firm, and apply a mulch over the surface when the work of planting is finished.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to LORD CLINTON, Bicton,
East Devon.

Planting fruit trees, &c.—Apple trees worked on the Crab, and Pear trees on the Pear stock require planting at a greater distance than those worked on the Paradise and Quince stocks respectively. Standard Apple trees should be placed at a rod apart each way, and standard Pears require almost the same distance; an extra 6 feet between the rows will allow a line of bush fruits or Strawberries to be planted. Bush and pyramid trees of Apple and Pear should not be less than 12 feet apart, whilst in the case of horizontal or espalier-trained trees the distance should be 20 feet. Fan-trained trees, including those of Apricots, Peaches, Pears, Plums, Nectarines, and Cherries require a space of 15 feet between each tree, but cordons of these may be planted as close as 2 feet. If a greater distance than that mentioned be allowed, spare trees may be planted between the permanent ones, especially against walls or fences, and it is advisable to have a few extra young trees to take the place of any that die or become exhausted, particularly in the case of stone fruits. Gooseberry and Currant bushes should stand 6 feet apart each way, while in cases of cordons or grid-iron shaped trees against walls the distance may vary from 18 inches to 4 feet.

Small fruits.—The best varieties of Red Currants are Raby Castle, Fay's Prolific and Comet. White Transparent and White Dutch are the pick of the white varieties. Boskoop Giant, Lee's Prolific, and Baldwin are the best varieties of Black Currants. The best-flavoured Gooseberries are Careless, Bonny Lass, Pitmaston Greengage, Leader, Early Sulphur, Alma, Whitesmith, Greenock, Red Warrington, and Golden Gem. A few bushes of Gooseberries planted against a north wall prolongs the season of fruiting, but the flavour of the fruits from these bushes is not as good as those grown in sunnier positions.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq.,
Cobham Park, Surrey.

Broccoli.—These plants are still making a very free growth, owing chiefly to the warm weather and humid atmosphere of the past few weeks. The plants will, in consequence, be very liable to injury directly hard weather sets in, unless the practise of "heeling-over" is resorted to. This precaution, although it reduces the size of the curds, protects the plants, and thus provides against absolute failure. The work is done by removing about a couple of spadefuls of soil from the north side of the plants, partly raising and forcing the stems into this space with a spade from the opposite side, and leaving the "head" of the plant resting on the surface in a slanting position facing to the north. In gardens where the plants are more backward, and have not made such active late growth, this method of protection will not be necessary, as under usual circumstances

Broccoli is hardly enough to withstand the ordinary cold of winter.

Early Peas in beans. In favoured districts the seeds should, if not already sown, be planted at once, but unless a warm position and one that is protected from east winds later on, is available, the sowing of this crop will be in vain. On a light, sandy soil, in protected situations, however, no doubt need be entertained as to the result.

Potatoes.—Continue to plant Potatoes in frames from "sets" that have been given a good start in boxes, and that have made both root and top growth. If a continuous supply is needed, more "sets" should be placed in boxes, in order to have them well started into growth by the time they are required for planting.

Salads.—Continue to blanch endive as required, and, as Lettuce will now be getting scarce, the greater will be the demand for the former. Further supplies of Chives and Chicory should be got in, and sowings be made of Mustard and Cress.

General remarks.—Any necessary work that has been delayed should in all cases be taken in hand as soon as possible, while the weather remains favourable. Where digging and trenching are in progress, full advantage should be taken of dry mornings to wheel on to the ground the different materials, such as the stumps of Brassicas, tops of Carrots, Beetroot, &c., which are intended for placing at the bottoms of the trenches. These vegetable remains not only form a valuable manure, but they have a beneficial effect on the ground for a long time.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of the Parks and
Open Spaces in the City of Cardiff.

Pruning shrubs and thinning out shrubberies.—In a great many instances shrubberies are planted in parks for the purpose of blocking out a view or screening some object. This is especially the case with boundary shrubberies, and for this reason the invariable aim of those who plant them is to get as dense a growth as possible. For the first few years after a shrubbery is planted all the attention bestowed upon it is with the object of inducing the plants to grow as rapidly and freely as they will, and during that period they give but little trouble. When, however, they begin to fulfil their object and become dense screens, they commence to give trouble to those whose duty it is to keep them in a healthy and useful condition. For a time this can be attained by thinning out and transplanting perhaps every other shrub in the border, but the time comes sooner or later when this is no longer possible, and the only means of maintaining the shrubbery in a proper condition is by the vigorous use of the knife in cutting back and thinning out the overgrown branches.

Pruning is necessary.—Those who have seen small nursery plants gradually developing into an imposing and picturesque shrubbery will readily sympathise with the person who is tempted to put off pruning his shrubs as long as possible. It is, however, this very disinclination to use the knife which is often the ultimate cause of spoiling many good shrubberies. If taken in hand before the branches touch each other, it is quite possible for a shrubbery to be kept in good condition for an indefinite period, while the shrubs composing it retain their individual character for a considerable time. To keep the plants in good health it is necessary that plenty of light and air should be able to circulate amongst the branches, and when the shrubs have fully developed this can only be brought about by a periodical pruning.

Time for pruning.—Many flowering shrubs which bear their bloom on the old wood are best pruned immediately after their flowering period, but, generally speaking, the majority of shrubs can be dealt with during the winter and spring months of the year. Care should be taken when pruning to avoid as much as possible giving shrubs a formal or hedge-like appearance. While this kind of treatment is sometimes in keeping with the purpose and surroundings of a shrubbery, it is invariably far better to allow each shrub to take on its natural form. When large branches are removed the cuts should always be dressed with paint or tar, otherwise there is a danger of the main stem becoming damaged and diseased.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, NOVEMBER 18—

Nat. Chrys. Soc. Floral Com. meet.

TUESDAY, NOVEMBER 19—

Leeds Paxton Soc. Chrys. Sh. (2 day)

WEDNESDAY, NOVEMBER 20—

Darlington Chrys. Sh.

FRIDAY, NOVEMBER 22—

Roy. Bot. Soc. meet. Aberdeen Chrys. Sh. (2 days).

SATURDAY, NOVEMBER 23—

Morley and Dist. Paxton Soc. Chrys. Sh.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich 42°1'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, November 13 (6 P.M.) Max 54°; Min. 45°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, November 14 (10 A.M.): Bar. 30.1; Temp., 51°. Weather—Overcast.

PROVINCES.—Wednesday, November 13 (6 P.M.): Max. 53°; Cornwall & S.W. Ireland; Min. 40°; Scotland N.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—

Sale of Dutch Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY TO FRIDAY—

Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

TUESDAY—

Clearance Sale of Nursery Stock at White Hart Lane Nurseries, Barnes, by Protheroe & Morris, at 12.

WEDNESDAY—

3,300 Roses at 1.30; Palms, Azaleas, &c., at 5; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

WEDNESDAY AND THURSDAY—

Clearance Sale of Nursery Stock at Royal Nurseries, Ascot, by order of Messrs. Standish & Co., by Protheroe & Morris, at 12.

THURSDAY AND FRIDAY—

Clearance Sale of Fruit Trees and Nursery Stock at The Nurseries, Eynsford, Kent, by order of Messrs. Cannell & Sons, by Protheroe & Morris, at 12.

FRIDAY—

Imported and Established Orchids in large variety; Orchids in flower and bud, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Plant Collecting in China.

Owing to the courtesy of Professor C. S. Sargent, of the Harvard University, U.S.A., we are enabled to print the following details extracted from a private letter written by Mr. E. H. Wilson, on July 8 last, whilst at Ichang.

"I have just returned from a trip to the Lushan Mountains, near Kinkiang, a district previously visited by Père David, Maries, and others. I was away just three weeks, two of which were occupied in travelling to and fro. The foothills of the range are reached after traversing 10 miles of flat country from the port of Kinkiang. From the foothills an ascent of five miles brings one to the top of the first ridge (alt. 3,000 feet), facing and around which is the Missionary Sanatorium of Kuling. The range reaches 5,000 feet in its highest parts, and consists of three more or less distinct and irregular ridges separated by narrow valleys. The upper parts of the range enjoy a cool temperature and an abundant rainfall. At one time, doubtless, the whole range was well wooded, but now it is absolutely treeless and covered only by a dense low jungle-

growth. The variety of shrubs midst this jungle-growth is surprising. The species and genera are chiefly such as are found in western Hupeh around 3,000 feet alt. During the week spent there I managed to secure some 340 species in about 2,000 specimens. The majority are in half-ripe fruit, unfortunately, but this could not be helped.

"Of plants entirely new to me a magnificent Euonymus with large white flowers and a fine Schizandra with thick leaves and large yellow flowers were the most interesting. Bushes of Cladrastis sinensis abound, and near a temple I got a fine Tilia.

"At one time the Tulip tree must have been very common on the Lushan Mountains. Bushes still abound, and I saw one fine old gnarled specimen in a ravine—the sole remaining tree of any size. From this tree good fruiting material was obtained. The Sassafra and a Liquidambar occur sparingly as small trees, while Magnolia conspicua (?) is abundant but only in bush-form like everything else.

"One of the most interesting finds was Nyssa sinensis. It is fairly common, but I only found one large bush bearing fruit. Stuartia monadelphica (?) is abundant midst rocks, in the water-courses and everywhere. Laurineæ was the largest family collected, although, strange to say, only two or three species are recorded from this locality. Four species of Maple were secured; these include the true A. truncatum. Hamamelis mollis, Stephanandra chinensis, Schizophragma integrifolia, Cardiandra alternifolia, three species of Styrax, two species of Symplocos, several Vacciniums, Vitis, Ilex, and Viburnums are some of the plants of interest secured. Corylopsis is an exceedingly common shrub and extremely variable in foliage and degree of hairiness. At present I am undecided as to whether one, two, or three species occur. Hydrangea paniculata is a very common fluviatile shrub, and is very happy amidst rocks in the bed of the numerous torrents where it is fully exposed to the sun. I was interested in the discovery of this species since it does not occur in Hupeh or further west, nor can I find any record of its having been found wild in China proper heretofore. Possibly it is the same as the H. Moellendorffii, Hance. Around, the base of the range and on the Kinkiang plain Gymnocladus chinensis is one of the commonest trees; nowhere else to my knowledge is it nearly so common. A species of Liquidambar and Comptotheca acuminata also occur with Gymnocladus, whilst Magnolia hypoleuca is sparingly cultivated in the same locality. The Liquidambar may be the same as the species collected by Alabaster near Hankow.

"Pseudolarix Fortunei occurs wild on the Lushan, but I only succeeded in finding small trees. Around a temple half-a-dozen trees of this Conifer are planted, but none are of any considerable size. Fortune, it will be remembered, discovered this tree in the Chekiang Province. The Lushan Mountains probably represent its western limit of distribution. At the temple mentioned above are two magnificent Cryptomerias and an equally majestic Ginkgo, all these planted, tradition says, a thousand years ago. Certainly they are very old, but still in good health.

"Cephalotaxus Fortunei was very common

in the jungle, and Cunninghamia sinensis on the foothills. Two species of Pine occur, one on the plain and another on the higher parts of the range. The lowland species is the same as at Ichang, but the upland species differs from anything I have gathered elsewhere.

"Much has been written on the Chinese wax insect and its hosts. On the Lushan I found wax (wild) deposited on two species of Ash and a Privet, not one of the three being the recognised host. I am beginning to think that as far as the insect and wax are concerned any species of Ash or Privet will serve."

Tagasaste as a Fodder.

The interest which was taken some twenty or more years ago in a new fodder plant under the name of Tagasaste, the seeds of which had been received at Kew and distributed for trial in many of the Colonies, has been revived by a correspondence that has been published in the May and July numbers of the *Agricultural Journal of the Cape of Good Hope*. The plant referred to (*Cytisus proliferus*, L. fil. var. *Palmensis*), is a small tree of the Canary Islands, the leafy branches of which were recommended for feeding cattle. It is pointed out that, as a result of the distribution of the seed years ago, the trees have been raised and are thriving in many parts of South Africa, but no experiments have as yet been made with regard to the value of the leaves for cattle-feeding. The reason for this is said to be that they have already got lucerne in S. Africa, so that there is no need to cultivate another plant which is known as Tree Lucerne. Besides this the tree-form prevents it from being cut with the ordinary sickle, furthermore, stock refuse to eat the leaves, and finally the seeds are difficult to germinate. The writer says these difficulties are not insurmountable. First—"He poured boiling water on the sulking seeds and left them in the water for a day, and then planted them in a seed-bed, when nearly all started growing. He planted them out, a yard apart, in tilled soil, and let them grow as they liked for three years; then he cut them down to 3 feet high. In three months' time they had given long, soft, succulent, shoots. These he cut down regularly at intervals, and gave to his horses and stock. The horses struck eating, but he starved them into submission. Ever after they were greedy for that food. They thrived on it, and so did the cows and the other stock." The above account refers to Teneriffe, and what has been done there, the writer argues, can easily be done under similar circumstances in the Karroo and other districts in Africa, as well as in other countries possessing climates of a similar character.

R.H.S. FIXTURES FOR 1908.—The Council of the Royal Horticultural Society have fixed the following dates for the exhibitions of the society in 1908:—January 14 and 28, February 11 (annual meeting), March 3, 17, 31, April 14, 28, May 12, May 26, 27, 28 (spring show at the Temple Gardens), June 9, 23, July 7 and 8 (summer show at Holland House, Kensington), July 21, August 4, 18, September 1, 15, 29, October 13, 27, October 15 and 16 (British Fruit Show), November 10, 24, December 8, 22. Shows of Colonial fruit and vegetables, preserved fruits, and jams are also arranged for



Photograph by D'Ath.

VIEWS IN THE WINTER GARDEN AT EASTWELL PARK, KENT, THE RESIDENCE OF
H. J. KING, ESQ.

March 5-6, June 11-12, and November 26-27. Bottled British fruits, home-dried fruits, and preserved British vegetables will also be exhibited on November 26-27. The Royal Horticultural Hall is to be used for their annual shows by the Carnation Society on July 22, the Sweet Pea Society on July 24, the Rose Society for their autumn exhibition, probably on September 17, and the Winter-flowering Carnation Society on a date yet to be fixed.

SPECIAL SOCIETIES. The Council of the Royal Horticultural Society have revised their arrangements for the engagement of the hall by kindred societies for their shows in 1908 as follows:—1. If a kindred society can by arrangement fix their show on a Wednesday or a Thursday following one of the R.H.S. fortnightly shows, then the kindred society has the use of the hall free of charge, as well as the gate money received at their show (gate and other attendants being provided by them), but free admission is to be given to all holders of R.H.S. annual tickets. 2. A kindred society unable to adopt such Wednesday or Thursday must pay £5 to cover the cost of table arrangement, the gate money being taken by them. R.H.S. tickets again to admit free. 3. A kindred society declining to admit R.H.S. tickets must negotiate for the use of the hall on the same basis as an ordinary lessee. Kindred societies wishing to engage the R.H.S. Hall in 1908 should communicate with the SECRETARY, Royal Horticultural Society, Vincent Square, Westminster.

UNION OF HORTICULTURAL MUTUAL IMPROVEMENT SOCIETIES.—In order that this new "union" may be in complete organisation by the beginning of next year—1908—secretaries of horticultural mutual improvement societies intending to join it are asked to kindly communicate with the SECRETARY of the R.H.S. without delay. Societies affiliated with the R.H.S. will enjoy the benefits of the union in addition to their existing privileges without any additional fee.

LINNEAN SOCIETY.—A meeting will be held on Thursday, November 21, at 8 p.m., when the following papers will be read:—1, Mr. W. C. WORSDELL, F.L.S., "Abnormal Structures in Leaves, and their Value to Morphology"; 2, Mr. J. G. OTTO TEPPER, F.L.S., "Specimen-preservation in Australian Museums"; 3, Mr. S. T. DUNN, F.L.S., "Revision of the genus *Illigera*, Blume." Exhibitions: 1, Mr. C. W. ANDERSON, "Luminous Larva from British Guiana"; 2, Prof. A. DENDY, F.L.S., "Living Specimens of *Peripatus* from South Africa"; 3, Mr. G. C. DRUCE, M.A., F.L.S., "*Linaria arenaria*, and other British Plants."

BRITISH GARDENERS' ASSOCIATION.—We are informed that a meeting in connection with the above association will be held in Leeds on Tuesday, November 19, 1907 (first day of the Chrysanthemum show), in a room adjoining the Show Hall at the Engineers' Barracks, Claypit Lane. Messrs. E. F. HAWES and R. L. CASTLE, of the Executive Council, and other speakers, will address the meeting. The chair will be taken at 5 p.m. by Mr. CAMPBELL. All gardeners are cordially invited to attend.

THE BIRTHDAY HONOURS.—Amongst the recipients of Birthday Honours from the King, on the occasion of his Majesty's birthday, are Mr. JEREMIAH COLMAN and Mr. FRANK CRISP. Mr. COLMAN, who has received a baronetcy, is the proprietor of Gatton Park, Reigate, and is well known for his liberal patronage of gardening, especially Orchid-culture. Mr. CRISP, who has received a knighthood, has a most interesting garden at Friar Park, Henley-on-

Thames, including a rock garden he has constructed himself, which is one of the most remarkable we have seen in any private establishment. The rockery has been illustrated on several occasions in these columns. In addition, Mr. CRISP was treasurer of the Linnean Society for many years, and all those connected with the management of that society well know what valuable services he rendered in that capacity. We congratulate Sir JEREMIAH COLMAN, BART., and Sir FRANK CRISP, and wish them health to enjoy their honours for many years to come.

GEO. MONRO, LTD.—A pleasant reunion took place on Saturday last, the 9th inst., at the Cafe Monico, Piccadilly Circus, London, the occasion being the 13th annual dinner of the staff of GEO. MONRO, LTD., of Covent Garden. Mr. GEO. MONRO occupied the chair, and was supported by his co-directors, Messrs. E. G. MONRO, GEO. MONRO, JUNR., A. J. MONRO, and C. COLE, and a few friends. After dinner an excellent musical programme was enjoyed, interspersed by a few short speeches. The Chairman, in proposing the health of his staff, mentioned that, when he commenced business in Covent Garden 38 years ago, his staff was one boy, to whom he paid 9s. per week. To-day his London staff totalled 155, of whom 130 were present, and he had branches in Manchester and Guernsey. Several speakers, in proposing or acknowledging other toasts, testified to the excellent manner in which the business was conducted and to the cordial and sympathetic relations existing between employers and employees.

THE "SCHNEIDER" BANQUET IN PARIS.—On Saturday evening last a large and enthusiastic gathering of Mr. GEO. SCHNEIDER's friends took place at the Restaurant Ledoyen, Champs Elysées, Paris. The object was to celebrate his recent nomination as Officer du Mérite Agricole. Mr. ALBERT TRUFFAUT presided, and among the distinguished company present we noticed MM. ABEL CHATENAY, MOSER & SON, LOUIS LEROY, GEO. BRUANT, SALLIER, H. MARTINET, SALOMON, THIEBAUT & SON, NOBLOT, BOIS, MILLET, NONN, GRAVEREAU, CROUX FILS, AUG. CORDONNIER, BROCHET, G. TRUFFAUT, C. HARMAN PAYNE, and many others. The Chairman, after an eloquent speech, in which he made frequent allusions to the many services rendered to horticulture, and especially to the work of the French Horticultural Society of London, by Mr. SCHNEIDER, presented him with a handsome testimonial consisting of a clock, a pair of vases, and candelabra. An album containing the names of the 180 subscribers accompanied the presentation. Of these, 25 were Belgians, 10 English, 1 Italian, and the remainder were French. Mr. SCHNEIDER received an overwhelming ovation on rising to return thanks. At the conclusion of his speech he said he was commissioned to hand to M. THIEBAUT a handsome fruit stand in silver, and to add that the society had resolved to confer upon him the honour of a life membership of the society. M. E. THIEBAUT responded, and alluded to the warm welcome always accorded to young foreigners by Mr. SCHNEIDER on their arrival in London, and the help and advice he unceasingly accorded to them.

ARCTOTIS DECURRENS.—In the notice of the current number of the *Botanical Magazine* (see p. 330) the methods there mentioned as employed in propagating the shrubby species of *Arctotis* (*A. aspera*, &c.) were, by an obvious error, extended to the herbaceous *A. decurrens*. The great rarity of the latter plant sufficiently emphasises the difficulties that lie in the way of increasing it.

THE WINTER ROT OF POTATOS.—This common disease of Potatos is nearly always present to some extent in the tubers when in store, and reaches the proportions of an epidemic during hot, dry seasons. The tubers only are attacked, and inoculation by spores present in the soil takes place when the tubers are young, but as a rule, the disease is not noticeable when they are lifted although the mycelium of the fungus is present in the tissues. A leaflet recently issued by the Board of Agriculture states that as a preventive of an attack of winter rot the tubers should be well dried before storing. Flowers of sulphur sprinkled over them at the rate of 2 lb. to the ton will destroy the fungus, and also hold in check woodlice, &c., which by their movements convey the spores throughout the mass of tubers. Potato stores of whatever kind should be well ventilated. Land that has carried a diseased crop should not be planted with Potatos for some years afterwards. Kainit, at the rate of 5 to 6 cwt. per acre, applied in the drills before planting the tubers, or as a top-dressing before the horse hoe is used for the last time, will help in preventing attacks of this fungus.

Publications Received.—*Onions*, by Horace J. Wright, published by the London Agricultural and Horticultural Association, Ltd., 92, Long Acre, W.C. Price one penny.—*Les Arbustes d'Ornement de Plaine Terre*, by S. Mollet, published by Octave Doin, et Librairie Agricole, Paris. Price, 3 fr. 50 c.—*Mutations, Variations, and Relationships of the Onocheas*, by D. T. MacDougal, A. M. Vail, and G. H. Shull, published by the Carnegie Institution of Washington.—*Les Plantes Tropicales de Grande Culture*, by E. de Wildeman, Tome I., published by Alfred Castaigne, 48, Rue de Berlamont, Brussels.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

FUCHSIAS AS DECORATIVE PLANTS.—An old gardener may possibly regard the Fuchsia as of more worth than do the younger men. The older gardeners in their earlier days employed Fuchsias largely, and found them charming, graceful, beautiful subjects. They grew them then, as Mr. Webster does so finely now, as pot plants, both pyramidal and standard. They planted them against pillars and other supports, and employed them for draping the sides and roofs of conservatories or corridors. Out-of-doors they were similarly planted, and also largely used for flower-beds. At one time so popular was the Fuchsia that raisers had full encouragement to produce new and charming varieties; hence we had, and still have, a wealth of varieties. Would that the beautiful illustration you published last week of Mr. Webster's fine specimens cause a return to popularity for the Fuchsia, whether as a pot plant or for any other form of cultivation. Huge double Begonias, gigantic Chrysanthemums, tender, short-lived Dahlias, and similar plants have societies specially formed to promote their interests, but the beautiful Fuchsia has no such interests. If Mr. Webster of Beckenham, Mr. Bright of Reading, or some of those growers in the West of England who were in days past disciples or imitators of that veteran grower, James Lye, would bring some of their noble specimens to Vincent Square or to one of the great metropolitan summer shows, it would enable Londoners and other people to see how beautiful those lofty pyramidal Fuchsias really are. It is pleaded that these tall plants when in full bloom travel badly. Mr. James Lye, when at Market Lamington, specially raised varieties that did not drop their blooms readily. He realised the importance of this, and produced in his day some of the most free-growing, heavily-flowered varieties, and these did not drop their "bells" readily. I well remember seeing his noble specimens, 10 feet in height, which had travelled some 15 or more miles to a West of England show and back, yet seemed as full of flower two days later as though not one had fallen. With such varieties the danger in transit is minimised. To build up a noble

and perfect pyramid, some patience and cultural skill is needed. Once formed, it will remain a good specimen for several years. *D.*

JUDGING MUSCATS.—The letter on p. 331, signed by the four judges—honoured names in the horticultural world—is clear as far as it goes, but it leaves one point unexplained, and it is a very important one to all interested in fruit exhibitions. If they had the doubt mentioned respecting the Muscats being true to name, why was the 1st prize awarded to the collection, and the prize slips affixed to the cards of the three exhibitors before the final decision? It was stated at the show that a complaint was made after the awards were recorded and the cards turned face upwards. Is this the case or not? That the 1st prize slip was attached to Mr. Lock's card many can testify, so there must have been a mistake somewhere. But as it appears from the judges' statement that they decided the Grape was not a Muscat, the suggestion by *A. D.* in the same page should receive consideration, though if all the fruit has not been removed from the vine, I cannot see why the matter might not be settled this season. As it stands, the affair is exceedingly unsatisfactory all round. *R. L. C.*

—I was very glad to see a note on p. 331 from the judges respecting their decision in Class I., but with very great respect to them, I must say I am not at all satisfied with their explanation. If, as they say, when pointing the collections of fruit they were suspicious as to my Grapes being Muscats, why did they label my card 1st prize, and Mr. Goodacre's card 2nd prize? Surely before doing this they must have been absolutely satisfied that I had the best collection, and I should like to know who caused them to alter their decision. Do they mean to say that after awarding me 1st prize, they were not satisfied, and then tasted my Grapes, or after they had finished judging was their attention called to the fact that my Grapes were not Muscats, and they were thus caused to reverse the labels? I note the judges say they are not responsible for the naming of my Grapes, but surely judges selected for such an important exhibition should be qualified to satisfy exhibitors as to the names of the variety or kind of fruit which they decide is not truly named. At the Guildford Chrysanthemum Society's exhibition held last week, I was awarded 1st prize for Muscats cut from the same rods, and judged by three gardeners well known in the horticultural world. *James Lock.*

THE COLD STORAGE OF FRUIT.—The remarks on above subject (p. 313) remind one of a recent conversation with a man who deals in country produce. He was saying that he had purchased over 100 stones of late Apples in various lots. In reply to the query as to where he stored them, he said he had "pied" them like Potatoes, having found from experience they kept very well in that way until Christmas time and later if the process was carried out carefully. His plan is to choose a sheltered position in his garden, the soil of which is of a sandy character. He next marks out a space about 5 feet in width and in length, according to the quantity to be pied. He digs out the soil one spade depth with the crumbs, then lays a good bed of clean Wheat straw on the surface and up the sides of this opening. On this the Apples are carefully laid into a ridge, say, 3 feet in height, selecting only sound fruits. A good layer of the straw is placed on each side of the ridge, with the cut ends downwards, covering the whole up with about 9 inches in thickness of the surrounding soil, which is well beaten down. *Yorkshire Gardener.*

TREE PLANTING AND STAKING.—The instructive article, which appeared on p. 309, from Mr. J. Clark, should be of great value to many. I would like to add a suggestion to that article, and invite those who have not yet tried the lasting value of coir yarn for use in tying trees to do so, and they will find it will last about three times as long as the tarred hemp generally used. It is not so nice to handle or so easily strained up as hemp, but if it is first tied round the mat on the stem of the tree (not too tightly), the tree may then be held midway between two stakes so arranged as to take the strain from the windy quarter, or be tied firmly to one stake with the matting or sacking between. *Robert Brown, junr., 31, Bridge Street, Bristol.*

BOUVARDIAS.—In the article by *H. R. W.* on p. 307, in which he furnishes a list of selected varieties for winter blooming, the very finest scarlet of all—President Cleveland—is omitted. It is far superior to Hogarth and Dazzler, and has to a great extent superseded these varieties in the large trade establishments where plants are grown to supply Covent Garden Market. Again, a double white and double pink are given, but not Hogarth flore pleno, which is as far as my experience goes the best of the double reds, for at present we have no double counterpart of President Cleveland. In the article above referred to, mention is made of propagating the Bouvardia by means of root cuttings, and on this point I had at one time a rather singular experience. It happened many years ago, just at the time the double white variety Alfred Neuner was distributed. There was a great demand for it at a comparatively high price, and being engaged in the propagating department of a prominent nursery, I naturally desired to work up as large a stock as possible in a short time. Towards this end I propagated from cuttings both of the young shoots and of the roots, but while the first proved all true, the plants obtained from the roots only produced about 30 per cent. of double blossoms, the others being simply *B. Davidsonii*, from which the double-flowered Alfred Neuner originated. The experiments were repeated two or three times with much the same results, but circumstances have of late years prevented me making any further experiments in the matter. *W.*

SOCIETIES.

ROYAL HORTICULTURAL.

NOVEMBER 12.—The ordinary fortnightly meeting of the Committees took place on Tuesday last in the Vincent Square Hall, Westminster. The exhibits were not so numerous as usual, but they included an exceptionally fine group of stove and greenhouse plants from Messrs. JAS. VEITCH & SONS, for which the firm was awarded a Gold Medal.

Awards to novelties included one First-Class Certificate and one Award of Merit recommended by the ORCHID COMMITTEE, and one First-Class Certificate and five Awards of Merit recommended by the FLORAL COMMITTEE.

In the afternoon a lecture on "Succulent Plants" was delivered by Mr. R. Irwin Lynch, V.M.H.

Floral Committee.

Present: H. B. May, Esq. (in the chair), and Messrs. C. T. Druery, Geo. Nicholson, A. R. Goodwin, J. Green, J. T. Bennett Poë, Chas. E. Shea, E. Mawley, J. F. McLeod, G. Reuthe, W. Bain, Jas. Douglas, W. T. Ware, Chas. Dixon, C. E. Pearson, W. Cuthbertson, W. P. Thomson, E. H. Jenkins, W. G. Baker, Geo. Paul, J. Jennings, and Jas. Hudson.

Messrs. J. HILL & SON, Barrowfield Nurseries, Lower Edmonton, staged a group of *Gleichenias* in about 14 distinct varieties and species. All the plants were examples of high culture, and the group excited much interest. (Silver-Gilt Flora Medal.)

Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, set up a magnificent group of ornamental-leaved plants of exotic species, relieved with some showy Orchids and other plants in flower. This group was shown in Messrs. VEITCH's best style, and, in conjunction with an exhibit of winter-flowering Begonias, received the highest award of a Gold Medal.

A very long table was wholly filled with admirable plants of Begonias of the Gloire de Lorraine type by Mr. H. Parr (gr. to F. A. BEVAN, Esq., Trent Park, New Barnet). (Silver-Gilt Banksian Medal.)

Rev. H. BUCKSON, Sutton Hall, Derby (gr. Mr. Shambrook), showed *Cyclamen latifolium* in a setting of small Cocos Palms and *Isolepis gracilis*. (Silver Flora Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, again displayed bunches of Zonal Pelargoniums. This firm also exhibited an interesting collection of Cactaceous plants that served to illustrate many of the examples mentioned by Mr. Lynch in his lecture at the three o'clock meeting of the Fellows. (Silver Flora Medal.)

Mr. W. H. PAGE, Tangley Nurseries, Hampton, Middlesex, exhibited remarkably well cultivated flowers of winter-flowering Carnations in most of the choicer varieties. (Silver Flora Medal.)

Messrs. CLIBRANS, Altrincham and Manchester, staged winter-flowering Begonias of the semi-tuberous rooting type, including the varieties Mrs. Heal, Winter Glow, Winter Perfection, Bowden Beauty (rose colour), Ensign, &c. (Silver Banksian Medal.)

Mr. RUSSELL, Richmond Nurseries, Richmond, Surrey, showed tiny pot plants of *Aucuba japonica* that were bright with the scarlet berries. At one end of the group were small plants in fruit of *Cotoneaster horizontalis*.

Messrs. W. CUTBUSH & SON, Highgate Nurseries, London, N., also showed berried plants intermingled with Conifers and choice shrubs. As a separate exhibit this firm displayed Carnations in vases, Ericas, and other greenhouse plants. (Silver-Gilt Banksian Medal.)

Messrs. HUGH LOW & CO., Bush Hill Park, Enfield, showed vases of Carnations, plants of *Cyclamen*, Ericas, &c.

Messrs. H. B. MAY & CO., Dyson's Lane Nurseries, Upper Edmonton, showed Veronics of the shrubby type, Begonia Gloire de Lorraine, and its derivatives, small plants of *Chrysanthemums*, Poinsettias, Carnations, Ferns, &c. (Silver Flora Medal.)

Messrs. JOHN PEED & SON, West Norwood, London, displayed a number of Alpine and border plants.

Mr. G. REUTHE, Keston, Kent, made a big display with choice species of Himalayan Rhododendron, small Conifers in pots, interesting shrubs, and a number of Alpine and border plants. Amongst the shrubs were noticed *Lomatia pinnatifolia*, *Vaccinium ovatum*, *Pittosporum Tobira*, *Daphniphyllum macropodum*, &c.

Messrs. W. WELLS & CO., Merstham, Surrey, showed Chrysanthemums in newer varieties, and including many of the single and decorative types.

Mr. C. J. SIMPSON, St. John's Nursery, Mildmay Road, Chelmsford, made a pretty exhibit with Chrysanthemums, tall bamboo epergnes filled with single varieties being very effective.

Several big blooms of a white Japanese Chrysanthemum named Mrs. J. May and a few specimens of the pink-coloured Miss Olive Miller were shown by F. L. DAVIS, Esq., Northaw House, Potter's Bar (gr. Mr. May). (Silver Banksian Medal.)

AWARDS.

FIRST-CLASS CERTIFICATE.

Nephrolepis exaltata superbissima.—This is another Plumose variety of the well-known *Nephrolepis*. The fronds are more plumose and dense than *N. todeoides*, each frond being almost like a cushion, several inches in depth. Some of the pinnae grow upwards, at right angles to the rachis, thus producing the remarkable thickness of the frond. It is a very "hard" fern, and will probably be capable of withstanding ill-usage better than *N. todeoides*, but it is much less beautiful than that variety, being too dense, therefore of heavy appearance. Shown by Messrs. F. R. PIERSON & CO., Tarrytown-on-Hudson, New York, U.S.A.

AWARDS OF MERIT.

Chrysanthemum Foxhunter.—A very pretty, decorative variety of the Japanese type. The colour of the florets is brownish crimson, with buff reverse, which shows in the centre of the flower and almost all over it by reason of the tips of the florets incurving inwards.

Chrysanthemum Frank Payne.—This is a Japanese flower of sufficiently large size for exhibition. It is a smooth flower, almost white, but having a very pale lilac shade over the entire surface.

Chrysanthemum Freda Bedford (see description in our last issue, p. 334).—These three Chrysanthemums were shown by Messrs. W. WELLS & CO.

Nerine "Purple Princess".—This is a very fine Nerine, shown by H. J. ELWES, Esq., Collesbourne (gr. Mr. Walters). It was raised from a cross effected between *N. "Purple Prince"* and a novelty. The scape bore eight large flowers of good form, and in colour rich scarlet approaching crimson.

Begonia Miss Clibran.—This is described as being a hybrid *Begonia*, obtained from a cross between a tuberous variety and *B. socotrana*. It is, therefore, a winter flowering variety belonging to the section raised by Messrs. JAS. VEITCH & SONS. The flowers are double, rich pink in colour, and are very freely produced. Judged by its habit as shown and the finely-developed foliage, this plant has an excellent constitution, and is capable of making very free growth. It may be described as a more vigorous *Julius*. Shown by the raisers, Messrs. W. CLIBRAN & SON. (See fig. 136.)

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, De B. Crawshaw, J. Wilson Potter, R. Brooman-White, W. Bolton, H. Little, W. Boxall, W. Thompson, F. M. Ogilvie, J. Charlesworth, R. G. Thwaites, F. J. Hanbury, F. Sander, A. Dye, G. F. Moore, W. P. Bound, W. Cobb, W. H. Young, W. H. White, H. A. Tracy, F. J. Thorne, H. Ballantine, C. J. Lucas, W. A. Bilney, and H. G. Alexander.

H. SPICER, Esq., Aberdeen Park, Highbury (gr. Mr. Lovegrove), showed a group of about 100 *Cypripedium Spicerianum*, set up with Maidenhair Ferns and variegated *Panicum*. (Silver Banksian Medal.)

MESSRS. SANDER & SONS, St. Albans, arranged an interesting group, in the centre of which was a fine plant of their good type of *Vanda cœrulea*, with two spikes of 12 and 20 sky-blue flowers. Among the species were the curious *Listrostachys fimbriata* from Uganda, a fine *Phalænopsis violacea*, and various *Oncidium*s. (Silver Banksian Medal.)

MESSRS. CYPHER & SONS, Cheltenham, staged a group, specially good in *Cypripedium*s, including a fine selection of varieties of *C. insigne*, *C. Minos* Young's variety, and other hybrid *Cypripedium*s. (Silver Banksian Medal.)

MESSRS. HUGH LOW & CO., Enfield, had a showy little group, which included three distinct white forms of *Cattleya labiata*, a selection of *Cypripedium*s, and several interesting species of *Orchids*. (Silver Banksian Medal.)

MESSRS. ARMSTRONG & BROWN, Tunbridge Wells, showed a very good selection of hybrid *Cypripedium*s, *C. insigne* *Sanderæ*, *C. insigne* *Hercules*, &c. (Bronze Banksian Medal.)

MONSIEUR MERTENS, Mont St. Amand, Ghent, staged a small group of very pretty hybrid *Odonoglossum*s and two hybrid *Cattleyas*. (Silver Banksian Medal.)

SIR JEREMIAH COLEMAN, Bart., Gatton Park, Reigate (gr. Mr. W. P. Bound), showed his pretty *Brasso-Cattleya* *Mary*, in form like a *Brassavola*, but larger; cream-white, slightly tinged with rose, and spotted with purple; and *Cœlogyne* *Colmani*, both of which had previously secured Awards.

F. DUCANE GODMAN, Esq., Horsham, sent the superbly-coloured *Cattleya labiata* *Mrs. F. Ducane* Godman.

MR. H. A. TRACY, Twickenham, showed *Cypripedium* *Fred Hardy* var. *grande*—a finely-formed flower.

MESSRS. JAS. VEITCH & SONS, Chelsea, showed a very nice selection of *Orchids* in the centre of their magnificent group of stove-house foliage plants. *Cypripedium* *Diomede* (*Niobe* × *Leeanum*) was a pretty new hybrid.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), sent *Cypripedium* *Emperor of India*, a very large and finely-coloured flower.

MR. W. H. YOUNG, Mercury Nursery, Romford, showed a good yellow form of *Cypripedium* *insigne*, and two very pretty *C. Euryades*.

J. FORSTER ALCOCK, Esq., Northchurch, Berkhamsted, sent *Cypripedium* *nobile*, of unrecorded parentage, a large flower, of good shape and soft colouring.

MESSRS. EDGAR & CO., South Woodford, showed seven distinct forms of *Cypripedium* *insigne*.

Major G. L. HOLFORD, C.V.O., C.I.E., Westnort, Tetbury, showed *Lælio-Cattleya* *Priam* (*C. Harrisoniana* × *L.-C. callistoglossa*), a pretty flower, with pale lilac coloured sepals and petals and ruby-crimson lip, with the median area white and yellow; and *L.-C. Golden Beauty* (*L.-C. Ernestii* × *C. Dowiana*), with two spikes of 10 and 12 flowers and buds, of the form of *L.-C. Hippolyta*, yellow, with ruby-red front to the lip, and a line of the same colour from the base to the middle.

AWARDS.

FIRST-CLASS CERTIFICATE.

Cypripedium nitens, *Leeanum* var. *Hannibal*, from Major G. L. HOLFORD, C.V.O., C.I.E. (gr. Mr. H. G. Alexander).—A noble flower, with a leaning towards *C. nitens* *Sallieri* in colour, with the larger and finer-shaped qualities of *C. Leeanum giganteum*. The fine dorsal sepal is apple-green on the lower half, with spotted purple lines, the inch-wide margin being pure white. Petals broad and wavy on the margin, and, like the large labellum, honey-yellow tinged with chocolate purple.

AWARD OF MERIT.

Habenaria Uganda, from Sir TREVOR LAWRENCE, Bart., Burford (gr. Mr. W. H. White).—A very remarkable species of the *H. Bonatea* section from Uganda. The plant had a single stout stem, bearing at intervals fleshy, light green leaves, and a terminal inflorescence of 25 flowers and greenish buds. The very singularly-formed flowers were white in the centre, and green on the outer parts, and furnished with a greenish spur about 6 inches in length. The species of

Crawley, Sussex, staged a collection of vegetables, having Parsnips, Onions, Leeks, Brussel's Sprouts, Turnips, Cabbages, &c. (Silver Banksian Medal.)

THE LECTURE.

At the three o'clock meeting of the Fellows a lecture was delivered by Mr. R. Irwin Lynch, V.M.H., on "Succulent Plants." The lecturer stated that all succulent plants belonged to the type known as Xerophytes, that is to say, they are so constructed that they are capable of living under conditions where other plants would fail owing to lack of moisture. All Xerophytes, however, are not succulent, for some are thin and dry. Succulents are enabled to overcome this difficulty of water supply by storing a larger quantity of moisture in their cells (and hence their succulency), which they are able to retain during periods of drought owing to the character of their epidermis. Xerophytes attain their highest development in dry, warm climates, or on cold, wind-swept mountains, but they are found in nearly every country. Some are indigenous to Britain. It



FIG. 136.—*BEGONIA* "MISS CLIBRAN," AS EXHIBITED AT R.H.S. MEETING ON TUESDAY LAST, BY MESSRS. W. CLIBRAN AND SON. COLOUR OF FLOWERS, RICH PINK. (AWARD OF MERIT.)

this class are notoriously difficult to grow, and a Cultural Commendation was given to Mr. W. H. White (Orchid grower to Sir Trevor Lawrence) for his success with this fine specimen.

Fruit and Vegetable Committee.

Present: J. Cheal, Esq. (in the chair), and Messrs. W. Poupart, C. G. A. Nix, P. D. Tuckett, G. Reynolds, J. Davis, H. Markham, A. R. Allan, H. Parr, W. Pope, Geo. Woodward, A. Dean, Geo. Kelf, and H. Somers Rivers.

MESSRS. DOBBIE & CO., Rothesay, N.B., and Mark's Tey, Essex, showed a very fine exhibit of Potatoes in 72 varieties. A prominent position was given to a white oval-shaped maincrop variety named *The Factor*. (Silver Knightian Medal.)

MESSRS. HUGH LOW & CO., Bush Hill Park, Enfield, again displayed a collection of Apples and Pears, in all about 46 varieties. Interspersed in the group were trees of the *Citrus* family in fruit.

MESSRS. J. CHEAL & SONS, Lowfield Nurseries,

is a mistake to imagine that they always dislike water, for they sometimes grow under conditions of considerable moisture, and when this is the case they do not necessarily absorb more than they require. The plants further have, as already indicated, a special epidermal character, which, while checking the undue loss of moisture, yet allows the functions of respiration, &c., to be adequately discharged. The plants often are of such a shape as to expose to the air the smallest area of transpiring surface. Some of the species are of imposing appearance, and frequently exhibit spines of a very ornamental character. Many are remarkable for their gorgeous flowers of the purest and most brilliant tints. Mr. Lynch gave a list of representative species of the various genera, and explained their habitats, showing how certain genera occur in specific parts of the world. A large number of lantern slides, and specimens of many of the plants mentioned by the lecturer, added considerable interest to the subject.

BIRMINGHAM & MIDLAND COUNTIES CHRYSANTHEMUM, FRUIT AND FLORICULTURAL.

NOVEMBER 12, 13, 14.—The forty-seventh annual exhibition of this society was held in the Bingley Hall on the above dates. The show was smaller than that held a year ago, and the quality of the exhibits generally was not of such a high order of merit. Chrysanthemums, on the whole, were seen in fairly good condition, while the tables decorated with Chrysanthemum flowers were superior to those exhibited last autumn.

There appeared to be a falling off in the fruit classes: in some cases the quality of the fruit was good and in others below the average.

Vegetables were wonderfully good in quality.

Honorary exhibits seemed scarcely equal in extent to those of a year ago. They included miscellaneous plants, flowers, hardy shrubs and large displays of floral devices. Fruit and vegetables added greatly to the interest and spectacular effect of the show, which is considered to be one of the most important of its kind held in the provinces.

GROUPS OF CHRYSANTHEMUMS.

Eight exhibits were staged in the three classes provided for groups of Chrysanthemums.

The most important class was one for groups shown in areas of 20 feet by 12 feet, and for which the "William Butler" Memorial Silver Cup, kindly given by W. W. Butler, Esq., together with £10, were offered as the 1st prize. The cup, when won three times in succession, becomes the absolute property of the winner.

Of the three contestants this year, Messrs. SANFORD & CO., Hall Green, Birmingham, took the lead with an artistic arrangement, but in which the flowers were not of the best quality.

The 2nd prize of £7 was awarded to Messrs. JAMES RANDALL & SONS, Shirley, Birmingham, for a group consisting of very large well-finished flowers of the Japanese and incurved sections, but they were rather overcrowded, and the arrangement much too flat. J. A. KENRICK, Esq., Berrow Court, Edgbaston (gr. Mr. A. Cryer) was placed 3rd with a very creditable display.

In a similar class to the last named, but occupying less space, there were three exhibits, and much credit is due to Mr. J. AUSTIN, Sparkbrook, who took 1st prize with a splendid collection in which were several plants of the variety C. H. Curtis, which showed remarkably good culture. 2nd, Mr. NORMANSELL, Edgbaston (gr. Mr. S. Gibbs).

In a class for plants of decorative Chrysanthemums, each exhibit to occupy an area measuring 15 feet by 10 feet, to be arranged as grown, Messrs. SANFORD & CO., Hall Green, Birmingham, won the 1st prize; 2nd, Messrs. JAMES SIMPSON & SONS, Harborne.

Specimen plants.—With the exception of one class, all the prizes awarded in the specimen plant section were divided between E. MARTINEAU, Esq., West Hill, Edgbaston (gr. Mr. O. Brasier) and J. A. KENRICK, Esq., Berrow Court, Edgbaston (gr. Mr. A. Cryer).

The first-named exhibitor won 1st prizes in the classes for (1) six large flowering Chrysanthemums (Japanese excluded); (2) six Japanese; (3) three Japanese; (4) one Japanese; and (5) three single-flowered varieties. J. A. KENRICK, Esq. (gr. Mr. A. Cryer) was 2nd in each of the above-mentioned classes.

Both of these exhibitors were beaten by Col. E. PALEY, Mickleton Manor (gr. Mr. C. C. Rowland) in a class for one large flowering variety (Japanese excluded).

CUT BLOOMS.

The leading class was one for collections of blooms arranged on floor spaces measuring 20 feet by 12 feet. The inclusion of cut foliage, foliage plants and vases or stands of any shape or size was allowed. The 1st prize of £15 and a silver challenge shield, the latter to be held by the exhibitor during the ensuing year, was won by Mr. NORMAN DAVIS, Framfield, Sussex, with a magnificent group of flowers of excellent quality artistically arranged in bamboo stands and vases of various sizes. Richly-coloured Codiaums and sprays of hardy foliage were used with good effect to relieve the Chrysanthemums. 2nd, Messrs. W. SANFORD & CO., Hall Green; 3rd, STUDLEY HORTICULTURAL COLLEGE, Warwickshire.

Vase classes.—An important class was one for 18 Japanese blooms in six varieties and having stems 18 inches in length. The 1st prize was won by Lt.-Col. BEECH, Coventry (gr. Mr. E. J. Brooks), whose best flowers were Algernon Davis, Marquise V. Venosta, and F. S. Vallis. 2nd, Sir A. MUNTZ, M.P., Rugby (gr. Mr. H. Blakeway), with a splendid exhibit; 3rd, Mr. W. IGGULDEN, Frome, Somerset.

In a class for 12 Japanese blooms, distinct, and another for six Japanese blooms, MARK FIRTH, Esq., Leicester (gr. Mr. F. J. Clark), took both 1st prizes with beautifully fresh flowers of splendid quality.

The winning vase of any pink-coloured Japanese variety was staged by Mr. W. IGGULDEN, Frome, who had very good flowers of the variety Mrs. Barkley. The same exhibitor also contributed the best crimson-coloured Japanese variety in "Magnificent."

The Rt. Hon. JOSEPH CHAMBERLAIN, M.P., Highbury, Birmingham (gr. Mr. J. Deacon) had the best vase of any white Japanese variety in his blooms of Mrs. A. T. Miller. EARL SPENCER, Althorp Park (gr. Mr. Silas Cole), secured the premier prize for a vase of any yellow-coloured Japanese variety. The sort staged was F. S. Vallis.

Single Chrysanthemums.—A. H. HICKMAN, Esq., Cookley, Kidderminster, won the 1st prize in a class for four varieties of singles, eight sprays of each variety. He showed Edith Pagram, Grace, Bronze Pagram, and Mrs. T. Bird.

Table decorations.—The 1st prize for a decorative dinner table was won by A. HUGHES, Esq., Knowle (gr. Mr. T. Parry), who used single Chrysanthemums, narrow Codiaum leaves and sprays of Ampelopsis Veitchii; 2nd, Miss M. CLARKE, Sparkbrook. There were 24 exhibits in this class.

The best bouquet of Chrysanthemums was staged by Mr. A. E. FORTY, King's Norton, and consisted of a small soft pink Anemone-flowered variety.

Miscellaneous.—Two classes were provided for Cyclamen, the one for 12 plants and the other for six plants. The 1st prize in each class was awarded to Mrs. H. S. POWER, Derby (gr. Mr. A. Simeson), whose plants were rather small but well-flowered.

Primulas.—R. PEYTON, Esq., Augustus Road, Edgbaston (gr. Mr. A. W. Young), had the best six single-flowered Primulas; 2nd, J. A. KENRICK, Esq. (gr. Mr. A. Cryer).

Carnations.—The 1st prize of £4 offered for cut Carnations was awarded to Messrs. JAS. RANDALL & SONS, Shirley, Birmingham; 2nd, Mr. S. MORTIMER, Farnham, Surrey.

FRUIT.

There were only two competitors in a class for British-grown fruit to occupy spaces not exceeding 40 square feet. The principal prize of £7 was awarded to the Earl of HARRINGTON, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre), whose collection contained very fine examples of Muscat of Alexandria and Gros Colmar Grapes, richly-coloured Apples, Peaches, Plums, and Pears; 2nd, the Earl of CARNARVON, Burton-on-Trent (gr. Mr. F. Read). The Grapes in this collection were large and well-finished, but the Apples and Pears were deficient in colour.

In a class for a collection of British-grown hardy fruits arranged on a table measuring 12 feet by 8 feet, a silver challenge cup was offered by Councillor H. S. Bevins. The only collection was one staged by Mr. C. W. POWELL, Hereford, who thus holds the trophy for one year.

Grapes.—Grapes were splendidly shown. For six bunches in not fewer than three varieties, the Earl of HARRINGTON, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre), took the lead. The same exhibitor also had the best two bunches of White Grapes (Muscats excluded).

Lord BAGOT, Rugeley (gr. Mr. T. Bannerman), had the best three bunches of Black Grapes. His bunches of Barbarossa were very large and well-finished; 2nd, F. NEED, Esq., Great Malvern (gr. Mr. J. Jones), with Gros Colmar. The best three bunches of Muscat of Alexandria Grapes came from the gardens of HUGH ANDREWS, Esq., Toddington Manor (gr. Mr. T. Tooley).

C. WINN, Esq., Selly Park, carried off the 1st prizes in two classes for Black and White Grapes confined to local growers.

Apples and Pears.—The competition in these classes was keen, and in the class for six dishes of culinary Apples, Mr. E. W. CADDICK, Hereford, won the 1st prize, although closely followed by Mr. J. BOTT, Hereford. The best six dishes of dessert Apples were shown by the Earl of HARRINGTON (gr. Mr. J. H. Goodacre).

Pears.—The Earl of HARRINGTON (gr. Mr. J. H. Goodacre) also won in a class for eight dishes of Pears; 2nd, Mr. PETER BLAIR, Trent-ham. There were nine exhibits in this class.

VEGETABLES.

Special prizes for vegetables were offered by several seedsmen, and the produce exhibited was meritorious.

Prizes offered by Messrs. SUTTON & SONS, Reading, for collections of nine kinds of vegetables brought two competitors only. Of these, Mr. E. BECKETT, Aldenham, Elstree, was placed 1st; MARK FIRTH, Esq., Leicester (gr. Mr. F. J. Clark), being 2nd.

Messrs. WEBB & SONS, Stourbridge, offered prizes for eight kinds of vegetables, and six exhibits were placed before the judges, who awarded the premier position to Mr. JOHN HUDSON, Leicester; 2nd, Earl SPENCER, Althorp Park (gr. Mr. S. Cole).

Prizes for vegetables were also offered by Mr. ROBERT SYDENHAM, Messrs. W. H. SIMPSON & SONS, and Messrs. THOMPSON & CO., all of Birmingham.

HONORARY EXHIBITS.

The following awards were made to non-competitive exhibits:—

Gold Medals to Messrs. WEBB & SONS, Stourbridge, for vegetables; Messrs. PERKINS & SONS, Coventry, for floral devices; Messrs. GUNN & SONS, Olton, for floral devices; Mr. W. J. GODFREY, Exmouth, for Chrysanthemums and Zonal Pelargoniums; Messrs. YATES & SONS, Birmingham, for vegetables; Messrs. J. WATERER & SONS, Bagshot, Surrey, for hardy shrubs.

Small Gold Medal to Messrs. GUNN & SONS, Olton, for rockwork.

Silver Gilt Medal to the KING'S ACRE NURSERY Co., Hereford, for fruit.

Silver Medals to Messrs. PEWTERESS BROS., Hereford, for hardy fruit; Mr. WOOLMAN, Tysley, Birmingham, for Chrysanthemums; Messrs. HEWITT and Co., Solihull, for Carnations and hardy shrubs; STUDLEY HORTICULTURAL COLLEGE, Warwickshire, for bottled fruits; Mr. W. B. ELLISON, West Bromwich, for Ferns; Messrs. BICK BROS., Olton, for Alpine plants and cut flowers; Messrs. H. J. & A. HUGHES, Water Orton, for floral devices and cut flowers; Messrs. R. SMITH & CO., Worcester, for hardy shrubs and hardy fruits; Messrs. J. PEED & SON, West Norwood, for Chrysanthemums; Messrs. CHILD & CO., Acocks Green, for Chrysanthemums; Miss THOMPSON, Handsworth, for Cacti; Messrs. SANFORD & CO., Hall Green, Birmingham, for single Chrysanthemums; Messrs. THOMPSON & CO., Birmingham, for vegetables; Mr. VINCENT SLADE, Taunton, for Zonal Pelargoniums; Mr. R. W. GREEN, Wisbech, for Potatoes.

Bronze Medals to Messrs. POPE & SON, King's Norton, for hardy shrubs; Messrs. WELLS & CO., Merstham, Surrey, for Chrysanthemums; Mr. BURDEN, King's Heath, for Apples; Messrs. LEGG & SON, Moseley, for Chrysanthemums; Messrs. J. SIMPSON & SONS, Harborne, for shrubs; and Mr. RUDGE, Smethwick, for rustic work.

BRISTOL CHRYSANTHEMUM.

NOVEMBER 6, 7.—The 44th annual show of this society was held in the Drill Hall, Clifton, on these dates. Though Chrysanthemums form a prominent feature in this exhibition, the schedule also provides for numerous classes of other subjects, including Orchids, fruit, and vegetables. Trade exhibits added considerably to the success of the show. The society sets an excellent example in providing a stall, the contents of which are sold for the benefit of the Gardeners' Royal Benevolent Institution and the Royal Gardeners' Orphan Fund.

Groups of plants.—Mr. Bannister (gr. to Mrs. ST. VINCENT AMES) was the only exhibitor in

a class for a group of plants occupying an area measuring 15 feet by 10 feet. The group was deservedly awarded the 1st prize. It was arranged in a light manner, and contained a number of well-grown Chrysanthemums, mingled with Palms and other suitable ornamental-leaved plants. Two exhibitors staged in a class for a group of Chrysanthemums occupying a space of 60 square feet. Mr. Atwell (gr. to Mrs. J. B. BRAIN) was placed 1st with an assortment of large-flowered Japanese and single-flowered varieties. Mr. BANNISTER, who was 2nd, confined his arrangement to decorative varieties. In each case creditable displays were made. For a group of miscellaneous plants, other than Chrysanthemums, in a space measuring 50 square feet, Mr. ATWELL was the only exhibitor, and he was awarded the 1st prize. The group was composed chiefly of Orchids, *Salvia splendens*, and winter-flowering Begonias, interspersed with suitable ornamental-leaved plants.

Cut blooms.—Though some meritorious flowers were staged, the blooms collectively were not so fine as in some former years at this show, and this remark applies to the leading class, that for 36 blooms of Japanese varieties, in not fewer than 24 distinct kinds. There were five exhibits staged in this class, the leading one by Mr. IGGULDEN, Frome, who had good blooms of Reginald Vallis, Mrs. A. T. Miller, Algernon Davis, Mrs. Norman Davis, F. S. Vallis, Mrs. Barkley, Mrs. A. H. Lees, O. H. Broomhead, Mrs. R. F. Felton, Victoria and Albert, &c. 2nd, Mr. Sutton (gr. to W. A. TODD, Esq.), with a well-coloured set of leading varieties. 3rd, Mr. Woodman (gr. to SIDNEY HILL, Esq.).

Twelve Japanese blooms, distinct.—This proved a good class, in which five competitors staged. Mr. Baker (gr. to Dr. CROPPER) secured the premier prize with a good display, amongst which were the varieties F. S. Vallis, Mrs. F. W. Vallis, General Hutton, Lady Mary Conyers, and Bessie Godfrey. 2nd, Mr. J. Marshall (gr. to Mrs. TALBOT GREAVES); and 3rd, Mr. Perry (gr. to E. P. LEWIS, Esq.). A class was also provided for an exhibit of 12 Japanese blooms, the competition being open to amateurs and gentlemen's gardeners only. Mr. H. Woodward (gr. to E. WATTS, Esq.) was placed 1st in this class for an even stand of flowers. He was followed by Mr. J. MARSHALL.

Inward varieties.—The principal class for Inward Chrysanthemums was that for 24 blooms. There was little response, for Mr. E. Argell (gr. to E. J. CURTIS, Esq.) was the only exhibitor, and he was awarded the 2nd prize.

Fruit. Five exhibits were staged in a class for a collection of five dishes of fruits. The 1st place was well secured by Mr. T. Wilkinson (gr. to A. GIBBS, Esq., Tyntesfield, Somersetshire), with splendid bunches of Muscat of Alexandria and Mrs. Pince Grapes, Beurré Superfin Pear, Charles Ross Apple, Lady Palmerston Peach, and Coe's Golden Drop Plum; Mr. Strugnell (gr. to the Rt. Hon. W. H. LONG, Rood Ashton Park, Wiltshire), was placed 2nd, with an almost equally meritorious collection; 3rd, Mr. BANNISTER.

Grapes.—Six classes were provided for Grapes, and many excellent examples were staged, though some of the Muscats lacked the best golden colour. The best bunches of Muscat of Alexandria were shown by Mr. ATWELL; the best Black Alicante by Mr. A. O. Shelton (gr. to F. C. J. FISHER, Esq.) (one of these bunches secured a prize offered for the best bunch of Grapes in the show), and the best Lady Downes' Seedling by Mr. J. Bainton (gr. to Mrs. JEFFERIES). The finest examples of Gros Colmar were shown by Mr. WILKINSON, who was also 1st for Mrs. Pince.

Pears.—There was very close competition in the class for six varieties, and some excellent dishes were staged. Mr. BANNISTER won the 1st prize with fine fruits of Fondante de Thiriot, Doyenné du Comice, Beurré Hardy, Pitmaston Duchess, Souvenir du Congrès (in excellent condition), and Hacon's Incomparable. Mr. STRUGNELL was a close 2nd. Mr. STRUGNELL secured the 1st prize for four dishes, whilst for one dish of any ripe variety, Mr. F. A. Little (gr. to Mr. Justice FARWELL) was 1st with a fine dish of Doyenné du Comice.

Apples.—Here Mr. ATWELL was 1st in the class for six dishes of dessert Apples; 2nd, Mr. STRUGNELL. In the class for four dishes, Mr.

STRUGNELL led, with excellent fruits of Egremont Russet, Coronation, Allington Pippin, and King of the Pippins. Mr. WOODMAN took chief honours for six dishes of culinary varieties, with large, clean fruits; 2nd, Mr. STRUGNELL.

Trade exhibits.—Messrs. GARAWAY & Co., Durham Down Nurseries, displayed Apples, Chrysanthemums, and miscellaneous plants, including well-grown Cyclamen. Messrs. PARKER & SONS, Clifton, staged Orchids, Roses, wreaths, &c. Messrs. CYPHER & SONS, Royal Exotic Nursery, Cheltenham, arranged a large collection of Orchids. Mrs. WINSON, florist, Bristol, had a display of bouquets, wreaths, and other floral devices. Messrs. BROWN & SONS, Bridge Street, Bristol, staged bulbs and garden sundries. Mrs. ROGERS, Victoria Street, arranged floral devices.

HEREFORD FRUIT AND CHRYSANTHEMUM.

NOVEMBER 6, 7.—The annual exhibition of the above society took place on these dates in the commodious Shirehall. The displays, as a whole, compared favourably with those of former years, both in number and in quality. The exhibits of Apples and Pears, which were important features of the show, were tastefully arranged with a decorative material that relieved somewhat the monotony of many dishes repeated.

Apples and Pears.—The chief class was one for a collection of culinary and dessert Apples in not more than 50 varieties, and arranged in a space measuring 70 square feet. Mr. E. W. CADDICK, Caradoc, was successful in gaining the 1st prize, but this gentleman's exhibit gained only three points more than that staged by the KING'S ACRE NURSERY CO., LTD., who were 2nd. A class was provided for a collection of 30 dishes of Apples. Mr. R. M. WHITING, Credenhill, was the only exhibitor, and he was awarded the 1st prize. The best exhibit of dessert and culinary Pears in not more than 24 varieties was staged by G. T. BATES, Esq., Whitfield (gr. Mr. R. Grindrod); 2nd, Captain PALAIRET, Ledbury, these two being the only exhibitors. In the class for 12 varieties of culinary and dessert Pears there were four entries. The 1st prize was taken by the Rev. G. H. DAVENPORT, Foxley; 2nd, Sir J. R. COTTERELL, Garnons; 3rd, Mr. C. W. HAZLEHURST, Moreton Court. The champion dish of dessert Pears in the show was found in the 1st prize exhibit in the variety Doyenné du Comice. The fruits averaged 1 lb., the heaviest being 1 lb. 2 oz. In the class for a collection of eight dishes of dessert Pears A. W. FOSTER, Esq., Brockhampton, led, and he was followed by the Rev. J. BRIERLEY, Bidsdown. The premier exhibit of eight dishes of dessert Apples was shown by Messrs. GETTING & NEWTON, Mr. W. FIELDEN being awarded the 2nd prize. Messrs. COX BROTHERS, Ross, were 1st in the class for 12 dishes of culinary Apples.

A collection of fruits.—A class was provided for a collection of six dishes of fruits, but Pines were excluded. Colonel HENRY won the 1st prize with black and white Grapes, a good Melon, Cox's Orange Pippin Apple, Coe's Golden Drop Plum, and a dish of Pears. The 2nd prize was awarded to Sir GEORGE CORNWALL, and the 3rd to G. T. BATES, Esq. A. W. FOSTER, Esq., was 1st for three bunches of Gros Colmar Grapes; and for any other black Grape Colonel HENRY was 1st. The best bunches of white Grapes were shown by G. T. BATES, Esq.

In a class for a decorative group of fruits, preserved or fresh, the KING'S ACRE NURSERY CO. won the 1st prize.

Messrs. A. W. FOSTER, G. T. BATES, Sir J. COTTERELL, COX BROTHERS, GETTING & NEWTON, R. M. WHITING, W. E. E. KING, G. H. DAVENPORT, and Mrs. WOODHOUSE took the principal prizes in the single dish classes for Apples and Pears.

G. T. BATES, Esq., took the 1st prize for a group of plants; 2nd, Sir J. COTTERELL.

A collection of finely-coloured Apples was staged by the BRITISH COLUMBIA GOVERNMENT. The KING'S ACRE NURSERY CO. staged a collection of well-coloured plants of various kinds. Mr. WILSON, florist, Hereford, exhibited bouquets, wreaths, &c.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

OCTOBER 31.—Committee present: Messrs. E. Ashworth, R. Ashworth, Ashton, Cowan, Cypher, Keeling, Leemann, Parker, P. Smith, Shill, Sander, Upjohn, Ward, Warburton, Walmsley, Ball, and Weathers (hon. sec.).

No fewer than 15 groups of Orchids were staged at the meeting held on this date.

An interesting and welcome event was the exhibit staged by Mr. G. SHORLAND BALL, who through ill-health a few years ago was compelled to disperse his collection at Wilmslow. He staged a healthy batch of Cypripediums, for which he was awarded a Silver Medal. In the group were Cypripedium insigne (Harefield Hall var.), C. × Baron Schröder, C. insigne Sanderæ, C. × Archimedes (Ball's var.), and C. × "Eve," a charming hybrid, of which the parentage was unrecorded. This very beautiful hybrid may be likened to a form of C. × aureum, but it has more tone and delicacy than any known varieties of C. × aureum. The plant received an Award of Merit. C. × Maudiae (var. delicata) and C. × Harrisianum (G. S. Ball's var.) were voted Awards of Merit. C. × Keighleyense was also in the group.

A. WARBURTON, Esq., Haslingden (gr. Mr. Dalgleish), again exhibited a collection of Cypripediums, to which a Bronze Medal was awarded. Amongst these was a distinct form of Cypripedium × triumphans called Crook's var., which received an Award of Merit. In a group of miscellaneous Orchids staged by the same exhibitor was a well-flowered plant of Vanda cœrulea, to which the Committee also voted an Award of Merit; Cattleya aurea var., Cattleya labiata var., Cattleya labiata var. "Purple Moth," C. labiata var. Mrs. A. Warburton each received an Award of Merit, while Cattleya labiata var. King of Greece was given a First-Class Certificate. (Silver-Gilt Medal.)

MESSRS. J. CYPHER & SONS, Cheltenham, exhibited a good group of plants, in which were well-grown examples of plants in season. An Award of Merit was granted to Phaiolymbidium × chardwarensis, a distinct hybrid with rich orange-coloured flowers, which plainly indicated its generic parentage. (Silver Medal.)

S. GRATRUX, Esq., Whalley Range (gr. Mr. Shill), received a First-Class Certificate for Cypripedium × Hitchense var. "Diabolo."

Messrs. CHARLESWORTH & Co., Bradford, exhibited in a group of other Orchids the beautiful Brasso-Cattleya × Queen Alexandra. (Silver Medal.)

G. H. PEACE, Esq., Monton, exhibited Cypripedium × Memnon, and C. × Milo (Cobb's var.).

E. ASHWORTH, Esq., Wilmslow (gr. Mr. Holbrook), was awarded a First-Class Certificate for Cattleya × Fabia (Harefield Hall var.), a rich and beautiful form of this hybrid.

E. ROGERSON, Esq., Didsbury (gr. Mr. Price), staged a good group, principally composed of Cypripediums. A few other choice plants such as Cattleya × Hardyana var. alba, Cattleya × "Dusseldorffii," and a fine form of Oncidium Cavendishii were included. Amongst the Cypripediums exhibited were C. × Priam, C. × Vidor (Award of Merit), C. × Mrs. Atchison (Award of Merit), and C. × Abraham Lincoln. (Silver Medal.)

J. H. CRAVEN, Esq., Keighley (gr. Mr. Corney), exhibited a group in competition for the "Sander Cup." Cypripedium × Leeannum var. Adrian Lefebvre received an Award of Merit. (Silver Medal.)

Z. A. WARD, Esq., Northenden, was awarded a Silver Medal for a group of Cypripediums of good quality.

H. J. BROMILOV, Rainhill (gr. Mr. Morgan), was awarded a Bronze Medal for a group of Cypripediums. C. × Actæus (Drewitt's var.) and C. Charlesworthii ("Rann Lee" var.) received Awards of Merit.

MAX ISAAC, Esq., Blundellsands, Liverpool (gr. Mr. Driver), staged a small group of Cypripediums in variety, and Cattleya × Cranstonæ. (Bronze Medal.)

J. MACARTNEY, Esq., Bolton (gr. Mr. Holmes), received an Award of Merit for Cypripedium × Mrs. Macartney. C. × grande, C. × Vidor, C. × Leeannum (Hey House var.) were also shown. A Bronze Medal was voted for the Cypripediums and a Silver Medal for the general collection.

Messrs. SANDER & SONS made a good display of Cattleyas, Cypripediums, and Odontoglossums. (Silver Medal.)

Messrs. KEELING & SONS, Westgate Hill, received a Bronze Medal for an interesting group containing several plants of botanical interest. Mr. W. BOLTON, Warrington, was awarded a Bronze Medal for a group of Orchids, principally Cattleyas and Cypripediums. P. W.

SOUTHEND-ON-SEA AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 5, 6.—The show held on these dates, under the auspices of the above society, proved to be the best all-round exhibition held by the society, for not only were the exhibits more numerous than in previous years, but the cut blooms were larger and better in quality. Mr. J. BURLS (gr. to J. TABOR, Esq., The Lawn, Rochford), staged the best circular group of Chrysanthemums in pots, and he was followed by Mr. S. HANSEN (gr. at the Queen's Hotel, Westcliff-on-Sea).

Mr. Bines (gr. to Messrs. GARDNER BROTHERS, Southend), had the best group of miscellaneous plants, Mr. DAVEY having the second best exhibit in this class.

In the open classes for cut blooms, Mr. JOHN BURLS was very successful, taking no fewer than five 1st prizes. Included in his stand of 24 blooms was the finest flower in the show, a grand bloom of the variety W. Etherington.

Mr. H. E. CAMPKIN was easily the most successful exhibitor in the classes confined to amateurs, being 1st in every class he contested—seven. The blooms staged by this exhibitor, had they been shown in the open classes, would have competed very keenly with the 1st prize group.

Mr. EPPS had the best stand of 12 Incurved blooms, Embleme Poitevine, Pantia Ralli, and Edith Hughes being his best examples. The most prominent blooms staged in the open and amateur classes provided for Japanese varieties were F. W. Vallis, F. S. Vallis, Bessie Godfrey, Duchess of Sutherland, Walter Jinks, and Norman Davis. Mr. ROBERT MAY, Stroud Green, Rochford, Mr. DAVEY, Mr. S. HANSEN, and Mr. A. EPPS also staged creditable blooms in the above-mentioned classes.

FRUIT.

Mr. E. Elsdon (gr. to S. H. RUGG, Esq., Hamlet Court, Westcliff-on-Sea), was 1st for two bunches of Black Grapes, showing fair examples of Black Alicante. Apples and Pears were well shown.

Mr. E. Hill (gr. to Alderman MARTIN, Prittwell), was 1st for three dishes of dessert Apples, with even, medium-sized fruits of Ribston Pippin, Cox's Orange Pippin, and Margil.

Mr. G. MURRELL, Barling, was awarded the 1st prize for six dishes of kitchen Apples, showing fine specimens of Gloria Mundi, Bismarck, Beauty of Kent, Peasgood's Nonsuch, Warner's King, and Lane's Prince Albert.

Mr. G. MURRELL had also the best amongst four collections of six varieties of dessert Apples.

Mr. EPPS had the best six dishes of Pears, showing fine fruits of Brown Beurré, Pitmaston Duchess, Duchesse d'Angoulême, Beurré Clairgeau, Doyenné du Comice, and Dr. Froissart. Ten growers contested in this class.

Mr. W. A. VOSS was a capital 1st in the class for three dishes, showing good even fruits of Beurré Hardy, Brown Beurré, and Doyenné Boussoch.

SOUTHAMPTON CHRYSANTHEMUM.

NOVEMBER 5, 6.—This annual autumn show was held in the Victoria Hall, and was again a success. The exhibits of cut blooms were quite up to the average in point of numbers and quality. The leading class was one for 12 varieties of Japanese blooms in vases, three flowers of each variety in a vase. Mrs. OGILVIE (gr. Mr. L. Dawes), Rosecroft, Hambleton, was awarded the 1st prize after many years' competing for this position. She staged admirable examples of the varieties F. S. Vallis, Mrs. Mileham, J. H. Silsbury, Mme. G. Rivol, and Mme. P. Radaelli. 2nd, Prince HATZFELDT (gr. Mr. F. Bible), Draycot Park, Chippenham. For two varieties of white-flowered Japanese

Chrysanthemums, three blooms of each variety, Major CHICHESTER (gr. Mr. B. Hollis), Embley Park, Romsey, was placed 1st for typical examples of Edith Smith and Mrs. A. T. Miller. 2nd, Prince HATZFELDT. In the similar class for two varieties other than white, Mrs. OGILVIE won with F. S. Vallis and Mrs. G. Mileham.

A class was devoted to gardeners and amateurs only, for 18 Japanese blooms. This was well contested. Mr. TRAGETT (gr. H. Pearce), Awbridge Danes, Romsey, took the premier prize with typical examples of popular varieties.

Single-flowered and decorative varieties of Chrysanthemums, undisbudded, were numerous, and no fewer than 10 exhibits of "singles" and 14 of decorative varieties were staged. A. F. FLYNN, Esq., Red Lodge, Bassett (gr. Mr. E. Cook), showed the best single varieties; whilst Mrs. AUSTIN, Bishop's Waltham (gr. Mr. G. Barnes), was the most successful for decorative varieties.

Incurved varieties were of fairly good quality, Prince HATZFELDT being successful with good blooms of well-known sorts.

Plants were well shown. The best collection of Chrysanthemums arranged in a space measuring 10 feet by 6 feet was displayed by J. C. D'ESTERRE, Esq. (gr. Mr. C. Hosey), who had well-grown plants carefully arranged.

Conservatory plants were best shown by Mr. ALLAN COOPER, 115, Hill Lane, Southampton.

Mr. E. WILLS, Winchester Road Nurseries, Southampton, had the best miscellaneous group of plants.

Exhibits of fruit and vegetables were numerous and good. Grapes were best shown by J. WILLIS FLEMING, Esq., Chilworth, Romsey (gr. Mr. W. Mitchell), and W. H. MYERS, Esq., Swanmore Park, Bishop's Waltham (gr. Mr. G. Ellwood). The best vegetables were from the gardens of Mrs. PEARCE and W. H. MYERS, Esq.

BRIGHTON AND SUSSEX HORTICULTURAL.

NOVEMBER 5, 6.—The above society's sixteenth annual exhibition of Chrysanthemums, fruit, and vegetables was held on these dates in fine weather. Although a slight reduction was seen in the number of entries, the show generally was a success.

In the class for a group of Chrysanthemums in pots, Mr. A. J. Blake (gr. to Dr. E. J. GULKHART, Brighton), won the 1st prize with a splendid group of plants that were well arranged; 2nd, Mr. G. Sims (gr. to E. A. WALLIS, Esq., Brighton).

The best exhibit of a circular group of Chrysanthemums, in a class from which trade growers were excluded, was shown by Mr. Geo. Mann (gr. to J. DUDNEY, Esq., Portslade), and he was followed by Mr. Geo. Bennett (gr. to P. H. BAYER, Esq., Withdean).

A strong competition was seen in the class for 36 Japanese blooms. Mr. J. Harris (gr. to Colonel C. P. HENTY, Avisford, Arundel) was awarded the 1st prize, which included a Silver Bowl. He showed, amongst others, fine blooms of the varieties F. S. Vallis, Mrs. H. Davis, Mrs. Knox, Valerie Greenham, Bessie Godfrey, E. J. Brooks, President Loubet, &c. Mr. H. Basset (gr. to Mrs. T. B. HAYWOOD, Reigate), was awarded the 2nd prize.

NON-COMPETITIVE EXHIBITS

A collection of Orchids was displayed by JEREMIAH COLMAN, Esq., Gatton Park, Reigate (gr. Mr. W. Bound). (Gold Medal.)

Messrs. CHEAL & SONS exhibited a collection of fruit. (Silver Gilt Medal.)

Messrs. W. BALCHIN & SONS, Brighton, displayed Chrysanthemums and other flowers. (Silver Medal.)

The BARNHAM NURSERIES, LTD., Barnham, Sussex, staged a collection of fruit. (Silver Medal.)

CARDIFF AND COUNTY CHRYSANTHEMUM.

NOVEMBER 6, 7.—The 21st annual exhibition held in connection with this society took place in the Park Hall, Cardiff, on the foregoing dates. The entries were numerous, and the exhibits of excellent quality; there were no signs of any diminution in public interest, and the show was well patronised on both days.

To commemorate the coming of age of the Society, a special class was introduced into the schedule this year for a collection in which not fewer than six of the different sections of Chrysanthemums were to be shown arranged in a space of 8 feet by 4 feet. Messrs. S. WILLIAMS & SONS, florists, Cardiff, secured the 1st prize and a piece of silver plate in this class with a well-arranged group. F. S. Vallis, Buttercup, Caprice du Printemps, Crimson Tangle, Crimson King, and Rosinante were the most noticeable blooms.

A 1st prize and a valuable piece of silver plate were awarded to Mr. DRAKE, Cardiff, for a collection of eight vases of specimen blooms of distinct Japanese varieties, three blooms of each. The varieties shown were V. Greenham, Reg. Vallis, F. S. Vallis, H. Silsbury, Mrs. A. T. Miller, W. Jinks, President Viger, and Mrs. Barkley—all of first-class quality. The same exhibitor was successful in carrying off the 1st prize for a collection of 24 blooms of Incurved varieties of not fewer than 12 sorts. These were as fine a lot of Incurveds as one could wish to see, and comprised such varieties as Mrs. F. Judson, Mrs. S. Denyer, Pantia Ralli, Godfrey's Eclipse, Frank Trestian, and Ialene.

For a stand of 24 blooms (Japanese), not fewer than 18 varieties, the Marquis of BUTE (gr. Mr. Farmer) was placed 1st, and awarded a Challenge Cup. Some of the best blooms were Ben Wells, J. H. Silsbury, W. A. Etherington, Mrs. W. Knox, and P. Radaelli. A. T. STEVENS, Esq., Sully (gr. Mr. J. J. Graham), the holder of the cup for the two previous years, took 2nd place.

A. F. HILL, Esq., Cardiff, was awarded a N.C.S. Silver Medal and 1st prize for a stand of 12 Japanese blooms in not fewer than four varieties. F. S. Vallis and President Viger were the outstanding features of this exhibit. A bloom of A. Davis, staged in the 2nd prize lot in this class, received the certificate for the best bloom in the show. This was exhibited by F. PRIMAVESI, Esq., Cardiff (gr. Mr. Webber).

For a stand of six white Japanese varieties, Mr. S. DRAKE was awarded the leading prize. Mrs. A. T. Miller, Mrs. R. Cadbury, and Mrs. J. Lewis were among the best. F. PRIMAVESI, Esq., secured 1st place for 12 blooms in four varieties, shown with their own foliage. F. S. Vallis, P. Radaelli, and A. Davis were three of the kinds staged. The same exhibitor won the 1st prizes for five blooms of one white Japanese variety and five blooms of any Japanese variety other than white. The varieties shown were respectively Mrs. J. Lewis and P. Radaelli.

Single varieties were well shown by Dr. WALLACE, Cardiff, who was the principal prize-winner in this section. Some of the most striking sorts were Mrs. T. Bird, G. W. Forbes, Kitty Vaughan, Edith Pagram, and Metta.

Medals were awarded to the following firms for the special merit of their various exhibits:—Mr. W. TRESEDER, Cardiff, collection of Dahlias; Messrs. S. TRESEDER & SON, Cardiff, collection of Tea Roses; Messrs. W. CLIBRAN & SON, Altrincham, collection of Chrysanthemums; Messrs. CYPHER & SONS, Cheltenham, Orchids; and Messrs. CASE BROS., Mr. P. THOMAS, and Mr. W. HODGE, all of Cardiff, for floral designs.

MARGATE CHRYSANTHEMUM.

NOVEMBER 6, 7.—The 21st annual exhibition of this society took place on the above dates. The various classes were well filled, and the competition was keen. In the important class for a group of Chrysanthemums and other plants, the 1st prize for which included a cup valued at fifty guineas, Mr. J. CHAPMAN, Ramsgate, was placed 1st; 2nd, Major POWELL COTTON (gr. Mr. J. Cornford); 3rd, Mrs. MONTEFIERE, East Cliff, Ramsgate (gr. Mr. Kromlis).

Cut blooms of Chrysanthemums were largely displayed. F. J. BOBBY, Esq. (gr. Mr. Pullinger) took the 1st prize for 24 Incurved blooms.

Mr. BURGESS was similarly placed for an exhibit of 12 Incurved blooms. The best exhibit of 24 Japanese blooms was shown by Mr. CORNFORD.

Miss PEACOCK, Birchington (gr. Mr. Bishop), led in the classes for six and for three distinct blooms of Japanese varieties.

Fruit was well shown by Messrs. CORNFORD, BURGESS, BING, and F. KING.

TORQUAY DISTRICT GARDENERS'.

NOVEMBER 7. This society held their annual Chrysanthemum Show in the Bath Saloons on this date. The weather was fine, and the attendance was satisfactory. Competition was poor in the classes for plants, only two entries being secured for the group, in which a Silver Cup was offered, and only one for a group of single Chrysanthemums. The entries for specimen plants were also few, though the winning plants were of high excellence. One of the features of the exhibition was a group of six plants of the winter-flowering Begonia Mrs. Heal, exhibited by Mrs. H. J. WRAY.

In the open classes, the best exhibit of 36 blooms of a Japanese variety was shown by Rev. T. SHEEPHANKS, and he also won the 1st prize in the class for 12 Japanese blooms.

In the amateurs' classes, Dr. J. QUICK won most of the principal prizes.

The best four vases of Chrysanthemums were shown by Mrs. TOTTENHAM, the best epergne of Chrysanthemums, and the best single vase of Chrysanthemums arranged with autumn foliage by Mr. G. A. EMMETT.

FRUIT.

The premier exhibit of a collection of Apples was shown by Mr. H. ST. MAUR. Other successful exhibitors of fruit were Messrs. P. P. ALEXANDER, W. F. BAYNES, Mrs. BOYD, Mrs. TOTTENHAM, and Mrs. BUNDOCK.

In the vegetable classes, Mr. P. P. ALEXANDER won the chief award in the amateurs' classes, and Messrs. G. H. PEARCE & SONS in the open classes.

Many trade exhibits were staged. The DEVON ROSERY, Torquay, showed pot Chrysanthemums and other flowering and foliage plants, and about one hundred dishes of Apples and Pears.

Messrs. ROBERT VEITCH & SON, Exeter, had an attractive stand containing many herbaceous and rock plants. This firm also exhibited Apples.

Mr. HEATH, Kingskerswell, showed Violets, the variety Kaiser Wilhelm being particularly fine.

Mr. W. B. SMALE staged a representative collection of Cactus Dahlias, as well as some winter-flowering Zonal Pelargoniums.

PUTNEY AND WANDSWORTH CHRYSANthemUM.

NOVEMBER 7, 8.—The thirtieth exhibition under the auspices of this society formed a very attractive display in the Cromwell Hall, Putney, on the above dates. Although there was satisfactory competition in most of the classes, only one group was forthcoming in Class 1, which was arranged for collections of pot Chrysanthemums in not fewer than 20 varieties, and arranged on spaces not exceeding 40 superficial feet. J. W. CHARRINGTON, Esq., Roehampton (gr. Mr. J. Prentice), was awarded the Silver Cup and 1st prize for a very commendable exhibit. There were three exhibits in a somewhat similar class reserved for amateurs who do not employ a gardener regularly, and the best was shown by Mr. E. P. YARHAM, 62, Mexfield Road, Wandsworth. J. W. CHARRINGTON, Esq., won 1st prizes for the best group of miscellaneous plants, twelve blooms of Incurved Chrysanthemums, six blooms (Incurveds), six white blooms (Japanese), six pots of Cyclamen, three vases of Incurved blooms, and six pots of Roman Hyacinths. J. A. YOUNG, Esq., Stone House, West Hill (gr. Mr. G. H. Street), won 1st prizes in the important class for 24 blooms (Japanese), 12 blooms (Japanese), six table plants, three dishes of dessert Apples, and six distinct kinds of vegetables. In the class for vegetables there were as many as eight exhibits.

Another successful exhibitor was Madame STUART, The Convent, Roehampton (gr. Mr. A. Smith), who won 1st prizes for Pears, kitchen Apples, Black and White Grapes, and eight vases of Chrysanthemum blooms, &c.

Other winners of 1st prizes included the Dowager Countess of KINTORE (gr. Mr. D. Anderson), Wimbledon Park; JAS. HOOKER, Esq., Putney (gr. Mr. J. Dark); Sir J. W. LANCASTER, Putney Hill (gr. Mr. F. H. Goddard); Mrs. BARCLAY, "Ambleside," Wimbledon Park (gr. Mr. French).

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, Chelsea, contributed a very interesting group of fine foliage plants, interspersed

with a few Cattleyas, Carnations, and other plants in flower.

The Hon. Secretary is Mr. J. F. McLeod, and the Acting Secretary Mr. W. J. Reynolds, 53, Medfield Street, Roehampton.

WINDSOR CHRYSANthemUM.

NOVEMBER 8.—The annual show of this society was held in the Albert Institute, Windsor, and was an advance upon any previous exhibition at Windsor in point of quality of the exhibits. The Japanese blooms staged in the class in which the King's Challenge Cup was the coveted award were superior to anything seen at the Crystal Palace show of the N.C.S. Groups of Chrysanthemum plants were also of a high order of merit. Cut blooms formed the leading items of the schedule. The King's Challenge Cup, with a cash prize added, was offered for six varieties of Chrysanthemums, to be shown in vases, five blooms in a vase. Three growers only competed. Mr. F. Bible (gr. to H.S.H. Prince HATZFELDT, Draycot Park, Chippenham) just beat by one point last year's winner, E. G. MOCATTA, Esq., Woburn Place, Addlestone (gr. Mr. T. Stevenson). Both the 1st and the 2nd prize exhibits were extremely fine in quality. The winning blooms were F. S. Vallis, W. A. Etherington (extra large), Edith Smith, Mrs. W. Knox, Algernon Davis, and J. H. Silsbury. The best blooms in the 2nd prize stand were Duchess of Sutherland, J. H. Silsbury, F. S. Vallis, and Reginald Vallis.

In the class for 12 Incurved blooms and the same number of Japanese flowers, distinct, Lady Evelyn Mason offered a Silver Challenge Cup, for which five growers competed. The premier award was made in favour of J. B. FORTESCUE, Esq., Dropmore (gr. Mr. C. Page), who staged heavy blooms of Japanese and fairly good examples of Incurved varieties. Especially fine were the varieties Lady Talbot, F. S. Vallis, Mrs. C. Beckett, and John Peed. 2nd, Prince HATZFELDT, with superior Incurved blooms.

Mr. MOCATTA won easily in the class for 12 Japanese blooms, distinct, with superior flowers. In the class for six blooms of any one variety, Mr. FORTESCUE was the most successful exhibitor with huge specimens of F. S. Vallis.

There were three competitors in a class for 18 Japanese blooms, arranged in a space measuring 5 feet by 3 feet, with any foliage. Mr. FORTESCUE won easily with almost perfect blooms, lightly arranged with Ferns, Asparagus, and brightly-coloured sprays of Rhododendron (Azalea) molle.

Incurved varieties were well staged. Prince HATZFELDT won the 1st prize in the class for 18 blooms with large specimens of popular kinds. Mr. FORTESCUE secured the premier award in the class for 12 blooms with large flowers that showed a lack of finish.

For six bunches of single Chrysanthemums there were no fewer than seven entrants, of whom F. RICARDO, Esq. (gr. Mr. R. West), was easily 1st with a brightly-coloured set.

Large Japanese blooms were effectively arranged in baskets and vases; Mr. MOCATTA winning for 12 specimens of Mrs. A. T. Miller, with Oak leaves and other attractive foliage intermingled.

There were only two groups of Chrysanthemum plants arranged in a given space with other foliage plants, but both contained blooms of high quality. That from E. B. FOSTER, Esq. (gr. Mr. W. Cole), Clewer Manor, however, easily gained the premier position, so fine were the blooms and so effectively were they arranged.

TRADE NOTICES.

Mr. HENRY MEADS has been appointed Rose Grower to Messrs. Hugh Low & Co., at the Bush Hill Park Nurseries.

MALCOLM CAMPBELL, LIMITED, GLASGOW.

The eighth annual general meeting of the shareholders of Malcolm Campbell, Limited, was held recently in Glasgow—Mr. Malcolm Campbell, managing director, in the chair. It was unanimously agreed to declare a dividend of 5 per cent. on the preference shares and 10 per cent. on the ordinary shares, payable on the 11th inst. The chairman stated that the business was in a very healthy condition, the outstanding feature for the year being the big increase in the floral decorative department.

Obituary.

JOHN ASSBEE.—We briefly recorded in our last issue the death of the respected superintendent of Covent Garden Market, whose portrait is now reproduced. Mr. Assbee has filled the important position as agent for the Duke of



THE LATE JOHN ASSBEE.

Bedford for a quarter of a century, and the extraordinary growth of the market in that period is illustrated by the fact that when Mr. Assbee was appointed there were only two collectors, and at the present time the staff numbers 50 persons. A memorial service was held at St. Paul's Church, Covent Garden, on Tuesday last, and the interment took place later in the day at the Cemetery, Richmond, deceased having resided in that suburb since May last. The funeral ceremony was attended by numerous friends, and the floral tributes were of such a character as went to show how greatly deceased was respected.

JOHN NEWTON.—The death occurred on the 7th inst. of Mr. John Newton, who for 25 years had charge of the Temple Gardens, Thames Em-



THE LATE JOHN NEWTON.

bankment, London. It was during Mr. Newton's management that Chrysanthemum displays were first opened to public inspection in these gardens, and it is not too much to say that,

largely to this initiative, the much larger collections were subsequently cultivated in the public parks for the same purpose. In this manner Mr. Newton may be said to have done much towards popularising the Chrysanthemum when its cultivation as a florist's flower was in the earliest stages. He commenced gardening as a boy in the gardens of the Duke of Bedford at Woburn Abbey. Subsequently he was employed in the Royal Gardens, Kew. At one time he held the position of head gardener at Luton Hoo, Bedfordshire. Mr. Newton resigned his position at the Temple about 12 years ago, and since that time has continuously received a pension from the Benchers. He was elected an honorary Fellow of the Royal Horticultural Society in connection with the holding of the May shows in the Temple Gardens. Deceased was 70 years of age. His son William is in business as a wholesale florist in the same street as the office of this journal.

ENQUIRY.

EFFECT OF WALLFLOWERS ON LAND.—I have recently noted in market gardens, where Wallflowers have been cultivated for their blossoms, that they seem, so to speak, to poison the soil, inasmuch that subsequent crops of all kinds do not grow satisfactorily. Has any reader found this to be the case? What kind of manure would be best to apply after a crop of Wallflowers? Wallflowers are Crucifers, but so are Cabbages, and these have not a similar effect upon subsequent crops. *B.*

ANSWERS TO CORRESPONDENTS.

ANTHRACITE COAL FOR SADDLE AND UPRIGHT BOILERS. *J. C.* There can be no doubt as to anthracite coal being the most efficient and economical kind of fuel to use for the heating of large or fairly large saddle and tubular boilers of both horizontal and upright patterns. But it is necessary that the furnaces should be large enough to contain a good bulk of coal at one time. More especially is this furnace-space necessary when banking up the fire the last thing at night, say at 10 o'clock, so as to ensure having a good body of fire and the desired degree of heat in the glasshouses eight or nine hours later. If these conditions are complied with, the water will generally be found to be at the boiling point at six or seven o'clock on the following morning. We may add that it is necessary always to have a fairly large body of clear fire in the furnace when banking up for the night, and, moreover, it is undesirable to let the fire burn down very low at any time before adding fresh fuel. When the desired degree of heat is registered in the houses in the morning, only a few lumps of anthracite need be placed in the furnace, and if the damper be pushed pretty far back in the chimney flue, no further attention will be required until the afternoon, when the coal put on in the morning will be found smouldering in readiness for receiving a few additional lumps of coal, re-starting the fires and drawing the damper well out. Anthracite coal requires more draught, and consequently needs a higher chimney stack than is necessary for coke fuel, to make it burn well. These details, though belonging to the art of stoking, are not altogether out of place in connection with the use of anthracite. Where coke is used in the same size and kind of furnace, to heat a given number of houses to the same degree of heat more labour is involved in stoking, i.e., in looking more frequently to the fires during the day and at night. Regarding the question as to which kind of fuel, anthracite or coke, is the cheaper and more efficient to use in the heating of glasshouses, experience shows that equally good results in heating power are obtained by the use of either anthracite or coke at about the same cost in the actual price paid for the fuel delivered, but that a great saving of labour in the way of stoking is effected in the use of anthracite coal, large red-veined anthracite being the best. This should be used in as large lumps as can be conveniently placed in the furnace, for the lumps should be

broken as little as possible. Therefore its recommendation for use in large furnaces, in which case greater economy and efficiency are attained.

APPLES: Northumberland. The specialist you mention recommends the variety Beauty of Bath in preference to Irish Peach for cultivation as dwarf trees in a villa garden. He would plant Ecklinville Seedling for yielding culinary fruits in September, and Warner's King for October and November. He declares the culinary variety Jubilee and the dessert variety Court-Pendu Plat to be extremely late-blooming Apples.

BEGONIA UNHEALTHY: T. A. & T. B. There is no fungus disease present on the plant you send; the unhealthy appearance is the result of some cultural error. Do not allow too much moisture about the plants, and be careful in the matter of ventilation.

BIRDS AND THE USE OF GAS-TAR WATER: J. A. E. The following is the substance of a note on the subject which appeared in these pages, February 16, 1907. Place a quantity of newly-made tar in an old iron pan, about half fill it with tar, and the other half with soft water. Leave this water undisturbed for 48 hours. One gallon of the water only (the tar must not be disturbed) should be mixed with four gallons of soft water. If the trees are syringed with this mixture, birds or insects will not be likely to visit the trees for some time afterwards. The unpleasant smell will gradually be lost, and the treatment must then be repeated.

CHRYSANTHEMUM LEAVES: T. A. The trouble is not caused by fungus disease. Your treatment of the plants has been at fault; have you given them an excess of manurial stimulant? A leaf-mining insect is present in one of the leaves, but this has not caused the general injury.

FRUIT BOTTLING: S. A. A. Apply to the manager, Mercia Agricultural Store, Bredons Norton, near Tewkesbury, or to Messrs. C. Lunn & Co., Chemical Works, Kirkburton, Huddersfield.

HIPPEASIRUM (AMARYLLIS) FLOWERING PREMATURELY: R. P. These plants occasionally flower prematurely. The cause of your plants flowering, however, we think is due to drying them off too early. A resting period of three to four months is ample for the bulbs, and yours have already had that period. Briefly, the treatment of the general batch of Hippeastrums should be as follows: Start the bulbs during January, February, or March; allow a period of growth extending from April until September. The bulbs should rest from October until December. We assume that the bulbs are now in a cool house or frame. A high atmospheric temperature would cause them to flower out of season.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time; they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers.* **FRUITS:** *G. W. B.* Pear Beurré Diel.—*M. P. M.* Gansel's Bergamot.—*W. E. B.* 1, Scarlet Golden Pippin; 2, Ribston Pearmain.—*D. M. G.* 1, Ashmead's Kernel; 2, Lancashire Pippin; 3, Duke of Devonshire; 4, Loan's Pearmain; 5, Debsling Pippin; 6, American Mother.—*A. L.* 1, Emperor Alexander; 2, Fearn's Pippin; Pears; 1, Fondante d'Automne; 2, Pitmaston Duchess; 3, Beurré Diel.—*P. C.* 1, Seckle; 2, decayed; 3, Bellisimer d'Hiver.—*J. H.* 1, Beauty of Hants; 2, Ashmead's Kernel.—*S. E. A.* The Queen.—*C. G. P.* Crofton Scarlet.—*C. L. Lawrence.* 1, Beurré Clairgeau; 2, Beurré Diel; 3, Claygate Pearmain; 4, Alfriston; 5, Lady's Finger; 6, Scarlet Golden Pippin.—*Eigot.* 1, Sheep's Nose; 2, Emperor

Alexander; 3, Lord Burghley; 4, Beurré Rance; 5, Bergamotte Espren; 6, Beurré Diel.—*J. Champion.* 1, Eas er Beurré; 2, Beurré Diel.—*W. D. S.* 1, Melon Apple; 2, not recognised; 3, Wyken Pippin; 4, Crimson Quoining.—*A. B. H.* 1, Princess; 2, Duchesse d'Angoulême; 3, Beurré Bacheuer; 4, Beurré Superfin.—*C. G. C.* 1, Annie Elizabeth; 2, Dumelow's Seeding (Wellington); 3, Scarlet Golden Pippin; 4, Allington Pippin; 5, Fearn's Pippin; 6, Calville Blanche.—*L. C. R.* Pitmaston Duchess.—*J. C.* Pitmaston Duchess.—*E. Bennett.* 1, Léon Leclerc de Laval; 2, Josephine de Malines; 3, Winter Codlin.—*A. D. H.* 1, Autumn Nelis; 2, decayed; 3, Winter Orange; 4, Beurré Diel; 1, Striped Beefing; 2, Warner's King.

PLANTS: *A. B.* Loasa canarinoides.—*C. P.* 1, Pinus Jeffreyi; 2, Pinus Laricio; 3, Pseudotsuga Douglasii; 4, Berberis vulgaris; 5, B. Darwini; 6, Phillyrea oleaefolia; 7, Phillyrea media; 8, Quercus Ilex.—*J. D. S.* Linaria reticulata purpurea.—*H. P.* 1, Adiantum assimile; 2, Pteris hastata; 3, Selaginella Wildenowii; 4, Selaginella Kraussiana; 5, Pteris longifolia.—*I. O.* 1, Cattleya luteola; 2, Cattleya Loddigesii.—*F. F.* Cotoncater frigida.—*X. Y. Z.* Cotoncater Simonsii (red). The other specimen is insufficient for correct naming.

NOVA SCOTIAN APPLE: H. G. K. The fruits you have seen labelled "King's" are probably of the variety known as "King of the Pippins." The difference in climate renders some of the Colonial fruits almost distinct in appearance from our home-grown fruits of the same variety.

SHELVES FOR FRUIT-ROOM: T. T. T. The best material for forming the shelves is matchboards, and $\frac{1}{4}$ inch space should be left between each board.

SOIL FOR A LAWN: Tennis. The amount of soil required will be 136 cubic yards, or about 136 cart-loads.

VEGETABLES FOR EXHIBITION: Hampshire. For each of the three crops mentioned—Onions, Cauliflowers, and Celery—farmyard or stable manure is almost indispensable if the best results are to be obtained. Therefore, during the winter season apply about 3 cwt. of well-matured dung to each pole of ground, working it well in during the work of trenching or digging. It is unwise to attempt to grow Onions for exhibition purposes without dung, however liberal the supply of artificial manure. Previous to trenching give a top-dressing of 8 oz. superphosphate and 4 oz. kainit mixed together per square yard of ground; these will thus become well incorporated with the soil before putting out the plants from the boxes in spring. As soon as the Onions are established give a top-dressing of 4 oz. per square yard of nitrate of soda, or 4 oz. of guano and 2 oz. of soot mixed together and sown during wet weather or watered in. Celery likes a loose, friable, sandy soil, and is a crop which requires to be more heavily dunged than any other crop of the garden; it may be said to be grown rather in dung than with dung; 6 oz. superphosphate, 4 oz. kainit, and 4 oz. nitrate of soda per square yard may be sown in the trenches, and worked into the soil before planting. For exhibition purposes quality must be regarded as well as weight. Celery raised with dung and fertiliser mixed is always more crisp and tender than when grown with dung alone. Cauliflowers like a fertile soil, but if the supply of dung runs short, then use 6 oz. of superphosphate and 4 oz. of nitrate of potash (ordinary saltpetre) per square yard of soil before planting, and sow 3 oz. nitrate of soda per square yard directly the plants are well established, giving a further top-dressing of 2 oz. of nitrate of soda or guano a month later.

WAGES IN SICKNESS: G. K. The information you have supplied is too meagre. Consult a local solicitor.

COMMUNICATIONS RECEIVED.—*W. D. & S.* (Thanks for 2s. 6d. for the R.G.O.F. box).—*W. G. S.*—*W. P. B.*—*A. D. H.*—*C. G. Riddham*—*Nat. Chrys. Soc.*—*A. V. F.*—*S. W. F.*—*Hampshire C. H. P.*—*Journeyman*—*C. W. F.*—*W. H. C.*—*G. W. A.*—*D. Carnation*—*J. B.*—*C. T. D.*—*H. J. S.*—*A. K.*—*W. K.*—*J. D. G.*—*J. Douglas*—*Rev. D. N. W.*—*T. H.*—*Louth*—*Birmingham*—*Dr. J. Bedelian*—*T. C.*—*W.*—*J. O'B.*—*J. Perrin*—*J. M.*—*S. McG.*—*J. H. B.*—*H. B.*—*F. D.*—*J. H.*—*C. B. G.*—*Mrs. M.*—*E. A. D. W.*—*A. C.*—*A. L.*—*E. S.*—*J. S.*



THE

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INFLUENCE OF CHERMES ON LARCH CANKER.

OF all Conifers grown in this country, none is of greater economic importance than the Larch. The rapidity of its growth, the strength and durability of its timber, and the certainty of finding a ready market, render the Larch, when grown under healthy conditions, one of the most profitable trees to plant.

Owing, however, to the prevalence of the dreaded Larch canker organism (*Dasyscypha calycina*, or *Peziza Wilkommii* as it used to be called) the Larch is beginning to be regarded with suspicion, and owners of plantations who have suffered loss in consequence of the attack of the canker, hesitate to put more land under Larch.

There is absolutely no cure for the canker once it has gained an entrance to its host, but the rejection of such a profitable tree should not be finally decided on until every possible means for preventing infection has been attempted. How infection takes place, and what are the causes which lead to it, are questions still in dispute, and Mr. Forbes⁽¹⁾

has given an account of the various theories which have been advanced to account for the disease, to which the reader should refer.

I only propose to speak of one of these theories, viz., that associated with the names of Hartig, Marshall Ward, and Masee. According to these eminent authorities the canker is a wound parasite, i.e., a fungus whose spores cannot penetrate the sound bark but can only enter a tree through a wound. Numerous inoculation experiments



FIG. 139.—CHERMES STROBILOBUS ON ONE-YEAR OLD LARCH SHOOT IN WINTER.

afford very strong evidence⁽²⁾ of the truth of this view, which is now held by the majority of mycologists. The statement by Mr. Caruthers⁽³⁾ that the spores can germinate on unwounded bark is not supported by evidence of a convincing nature, nor is it based on any inoculation experiments at all.

The further opinion has been expressed, that the aphid, *Chermes*, is responsible for



FIG. 140.—CHERMES STROBILOBUS IN HIBERNATING CONDITION, SHOWING PART OF THE LONG PROBOSCIS (GREATLY MAGN.).

the majority of the wounds through which the canker gains admittance to the tree. Mr. Masee⁽³⁾ held this view strongly, and the fact that he succeeded in infecting trees by merely placing spores below the bodies of the

insects added much strength to the argument. He believed that the destruction of the *Chermes* would eventually lead to the disappearance of the canker, and stated how these insects might be destroyed by spraying the trees in spring.

My own studies, which have been directed, not to the fungus, but to the insect and its effect on Spruce and Larch, led me to express a similar opinion in two recent articles.⁽⁴⁾ I was quite unaware of Mr. Masee's previous work or of his conclusions, until Mr. Henry recently directed my attention to it.

Since, however, Masee confessed that he could not say whether the *Chermes* actually wounds the tree or merely rests on the bark, some foresters have apparently shelved his striking experiments as insufficiently convincing. At all events Forbes, when reviewing the theory in his book, states that there is no direct evidence to prove any connection between the *Chermes* and the canker, and he demands "more proof than that now forthcoming that the spores enter only by such minute punctures, and further proof as to the extent to which two and three-year-old bark is punctured by aphides." He then goes on to say that the insects "practically spend their summer on the needles, and those that hibernate do so chiefly in the axils of the buds," by which he appears to mean that the one-year-old shoots are the only ones attacked by *Chermes*. He continues: "Do the fungus spores enter through these damaged needles? If so, then stem blisters ought to be most prevalent on two-year-old shoots, whereas this is far from being the case as every practical forester knows. Secondly, there is no evidence that the hibernating mother aphid does more than rest on the bud or bark, or that she punctures the latter in any way."

These remarks about *Chermes* show a want of knowledge as to the habits of the insects which might easily have been corrected by reference to the extensive literature of the subject. The author's omission to do this is the more regrettable since adverse criticism passed by a forester of such high standing cannot fail to exercise a far-reaching influence, and to deter many from putting the theory to the practical test. The fact that the winter-mothers puncture the bark is well known to those who have studied the subject, but owing to the sinuous course which the wound takes through the tissues, its minute size, and the obvious difficulty of obtaining such a microscopic preparation, it is doubtful whether the demand for direct evidence of the still more minute spores entering a tree through a *Chermes* wound will ever be satisfied. We must rely rather on the indirect evidence afforded by a comparative study of the habits of both insect and fungus.

I have elsewhere⁽⁴⁾ given a general outline of the complicated life history of the genus *Chermes*, to which the reader who wishes for further information can refer. The point that I wish to specially emphasise here is this:—Assuming that Hartig, Marshall Ward, and Masee are correct in their assertion that the canker is essentially a wound-fungus, then I maintain that the patches of

(2) *Journal of the Royal Agricultural Society*, 3rd series, Vol. ii., pt. 2; No. 6, 1891, p. 299.

(3) *Journal of the Board of Agriculture*, vol. ix., 1902 3, p. 176.

(4) *Journal of Economic Entomology*, 1907, vol. 2, pt. 1. See also *Proc. Cambridge Phil. Soc.*, vol. 13, pt. 1.

(1) *English Estate Forestry*, by A. C. Forbes; pp. 285-304.

"wool"-covered Chermes, often sticky with drops of honeydew excreted by the insect, form an ideal nursery in which the fungus spores may first be caught and subsequently germinate, and that the minute hole where the proboscis lies forms a natural door-way for the hypha, leading as it does directly to the inner cortex.

The history of the hibernating generation is briefly as follows:—As the autumn approaches, certain Chermes larvæ withdraw from the needles to the stem, and anchor themselves by driving their long proboscides into the bark. Such hibernating larvæ are to be found on both Spruce and Larch (figs. 139 and 143) and their habits are practically the same in both cases. The only difference is that, whereas the Spruce insect anchors itself on or near a bud, and causes that bud to grow into a Pineapple-shaped gall in the following spring, the Larch insect does not exhibit the same preference for buds, but sits anywhere on the stem and does not cause the development of a gall in spring. But for all practical purposes the structure and habits of both insects are identical. The proboscis,

the commonest species on the Larch, shown in the accompanying figures, only secretes a little flocculent mealy matter in this generation, though other generations in the cycle



FIG. 142.—LARCH SHOOT IN MAY, WITH OFF-SPRING OF WINTER MOTHERS. (a) WINTER MOTHERS AND EGGS.

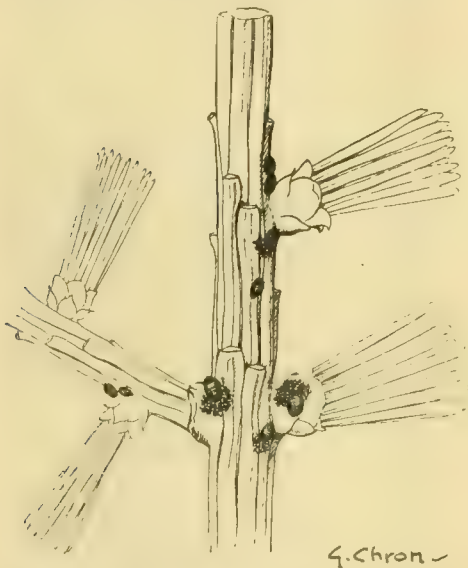


FIG. 141.—THREE-YEAR OLD LARCH SHOOT WITH CHERMES STROBILIBIUS AT THE BEGINNING OF APRIL. THE INSECTS HAVE BEGUN TO SUCK AND LAY EGGS.

which is nearly three times the length of the body (fig. 140) is driven deep into the tissues of the stem, and I have repeatedly traced its course in both trees through the bark into the cortex, and found the apex lying either in or quite near the cambium. I have no drawing of this stage for the Larch, but fig. 144 illustrates the condition for the Spruce. As soon as the insects are firmly attached they pass into a dormant condition. In spring the upward flow of sap appears to telegraph a signal along the proboscis, telling the insect to awake. She at once responds and, without moving from her position, begins to suck. She rapidly increases in size, undergoes three moults, covers herself with the well-known "wool," excretes a good deal of honeydew, lays some hundreds of eggs, and then dies. The proboscis, be it remembered, is still embedded in the stem, and the shrivelled remains of the mother are always to be found in the sticky little heap of empty egg cases, honeydew and mealy secretion, which marks the tomb of a Chermes. I should remark that

of the same insect have the usual "woolly" covering.

The insect is by no means always confined to the one-year-old shoots as Forbest supposes, but, as fig. 141 shows, it occurs on older stems, and often in considerable numbers. One species which is easily distinguished from the common *Ch. strobilobius* by its bright green eggs and thick secretion of "wool" is almost always found in crevices of the bark on branches which are several years old, or even on the main trunk of the tree.

Having now, as I think, stated sufficient evidence from the habits of the hibernating generations alone (without taking any account of their enormous progeny which I believe are at least equally injurious) to satisfy foresters that the insects are found on wood of all ages, and that they do actually puncture the bark, I ask, what better environment could a wound-fungus desire? A patch of "wool" to catch the spores, a little heap of decaying matter sweetened with the

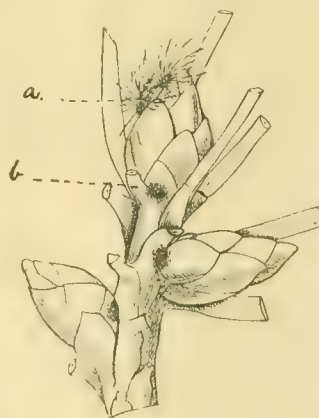


FIG. 143.—SPRUCE BUDS IN WINTER WITH (a) CHERMES STROBILIBIUS, (b) CHERMES ABIETIS.

sugary excretions of the insect in which to germinate and a tunnel all ready made leading to its future home in the cortex! But when, in addition to this, there is the convincing testimony of Masse's experi-

ments, proving that the spores float about in the air and can be caught by suspending cover slips smeared with glycerine near cankered trees, and, further, that if the spores are placed below the insects, cankers subsequently arise at those spots, the chain of evidence against Chermes is almost as complete as it well can be. It shows, with a probability amounting almost to certainty, that Chermes is chiefly responsible for the most costly and destructive disease of our woodlands.

I therefore earnestly hope that foresters will not contemplate the attacks of the Chermes in that spirit of calm, philosophic resignation which Forbes recommends, but will take energetic steps to rid the country of these pests.

In the hope of finding some satisfactory method of destroying the insects without injuring the trees, I tried the experiment of spraying infected Spruce Firs during the winter or in early spring, before the buds began to open, with a few different washes, the details of which experiments have been described elsewhere.⁽⁵⁾ The following wash gave most successful results:—Dissolve 3 lb.

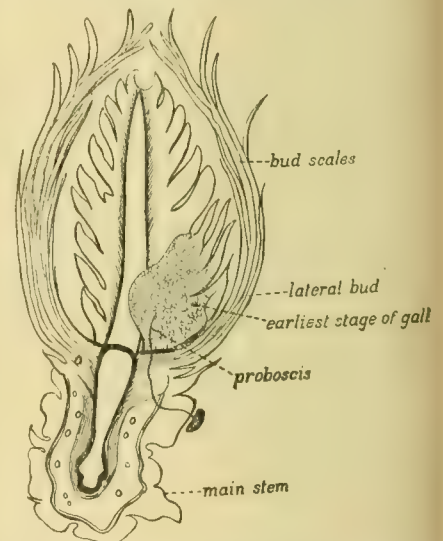


FIG. 144.—SECTION THROUGH A SPRUCE BUD ABOUT THE MIDDLE OF APRIL, SHOWING CHERMES ABIETIS WITH ITS PROBOSCIS PASSING INTO THE BUD. GALL-FORMATION HAS JUST COMMENCED.

of soft soap in 2 quarts of boiling water, add 1 pint of paraffin to it while still boiling, and churn the mixture till it forms a buttery mass. The stock is then diluted with 5 gallons of soft water. I found that the trees suffered no damage whatever when sprayed at this time of year, as the needles are sufficiently hardened to stand the wash, and the buds are protected by the thick layer of resinous bud-scales. The effect on the hibernating Chermes was deadly, and the diminution in the number of galls this year most marked, some trees hitherto always badly galled being now absolutely clean. The method was also tried at the Kew and Cambridge Botanic Gardens with marked results.

Pressure of time unfortunately prevented me from applying the method to the Larch, but as the Larch insect is only a later generation of the Spruce-gall insect, there is no reason to doubt that the wash would be equally effective, but the operation must be done before the buds begin to open, as the

⁽⁵⁾ *Journal of Economic Biology*, 1907, vol. i., pt. 2.

tender young foliage would infallibly be scorched if it were delayed till the buds had burst. In the leafless winter condition not only will there be less difficulty in applying the treatment, but the insects are more exposed to the action of the spray. It is perhaps superfluous to add that young plantations which have not yet become infected with the canker are the important ones on which the correctness or otherwise of the theory should be tested, and with these there is not the same difficulty in applying the treatment as in older densely crowded plantations. E. R. Burdon, M.A., F.L.S.

EASTWELL PARK.

(Concluded from page 339.)

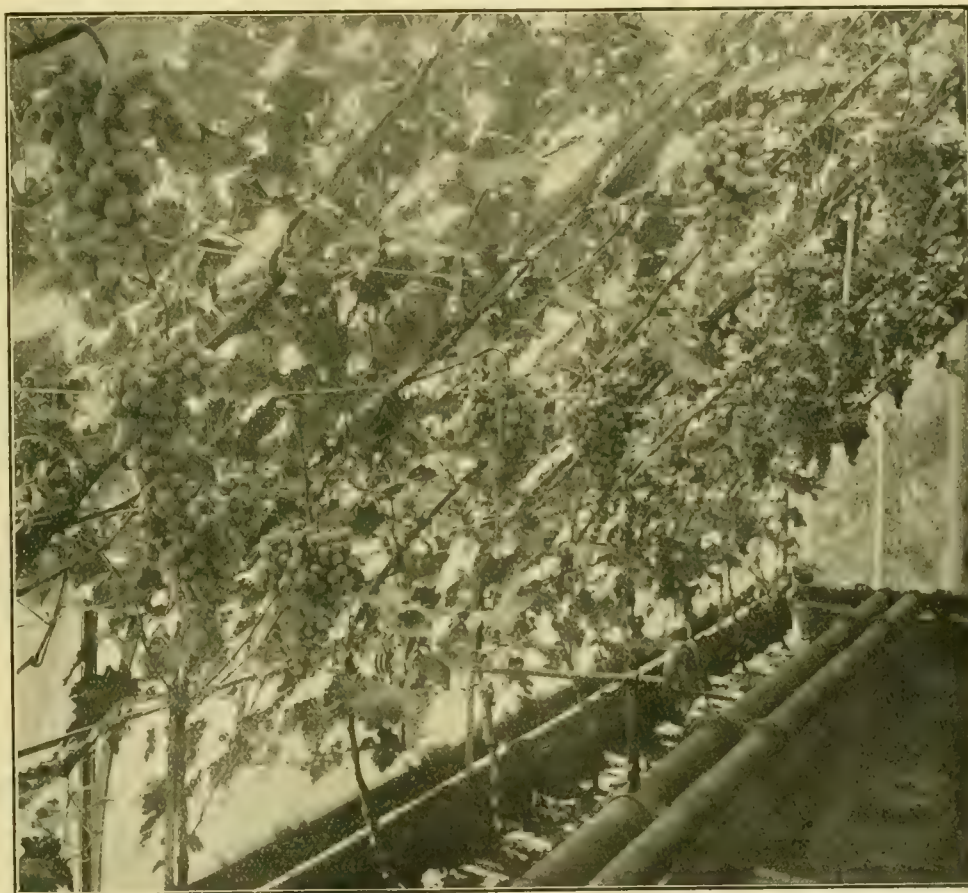
THERE are seven vineries at Eastwell, and all of them have hip-shaped or $\frac{3}{4}$ -span roofs. Four of these vineries represent a length equal to 130 feet. They are built of teak wood, the same kind of wood having also been used in building four Peach and Nectarine houses, which likewise extend 130 feet long. The vines are, in nearly all cases, young plants, and they bore excellent crops. Grapes from them having obtained first prizes at Richmond in June (less than 18 months from starting the "eye"), Wolverhampton in July, and the second prize in the largest class at the R.H.S. show held a few weeks ago, &c. The photograph reproduced at fig. 145 represents Muscat of Alexandria vines as they appeared when they had been planted 15 months.

Carnations are given excellent culture in these gardens. We were much impressed with the satisfactory appearance of the numerous plants in July. Three large span-roofed houses, one containing winter-flowering or "tree" varieties, another border Carnations, and the third house varieties of the Souvenir de la Malmaison section, were exceedingly interesting. We noted a few of the more prominent varieties of the winter-flowering strain. Lady Bountiful, white with occasional signs of pink, measured as much as $5\frac{1}{2}$ inches in diameter. Some of the flowers were pure white, the calyx seldom, or never, splits, and the petals are very wide and fringed. Mr. Weston was loud in his praises of this variety. Winter Perfection has large flowers, but they burst the calyces, and White Lawson is not so satisfactory. Leander, of rose-pink colour, had stiff, wiry stems $3\frac{1}{2}$ feet long. Harlowarden, a fringed flower of deep crimson, was described as an unusually good-tempered plant, growing and flowering with the utmost freedom. Hannah Hobart is of bright rose colour, the shade that is so liable to "fly" if exposed to bright sunshine, but shade is necessary for all these plants. The flowers are very large, and the calyces remain intact. Flamingo is a first-rate scarlet variety, although the blooms are less in size than some others. Of pink varieties, Fair Maid was making a good display, but Mrs. H. Burnett and Britannia, though present in the stock, were not in flower.

In the house containing Souvenir de la Malmaison the variety Lady Grimston bore nine open blooms whilst growing in pots only 7 inches in diameter. Trumpeter, of which there were 50 plants in pots of a similar size, had in some cases 10 flowers each,

the plants being only nine months old from the layers. This effect was obtained by layering growths with bunches of shoots at the top instead of a single growth. We cannot refer in detail to the remaining plant houses, including a Rose house, and others containing Eucharis, Calanthes, Poinsettias, Palms, Codiaëums, Caladiums, Cordylines, and the numerous species requiring indoor culture, nor need much be written in respect to the pits and span-roofed houses in which Melons, Cucumbers, and Tomatos are cultivated. Sufficient has been said to show what an extensive and well-equipped garden Eastwell possesses. It may, however, be added that our visit having been made at the time Strawberries were ripe, we ascertained that the varieties chosen for cultivation include The Laxton, Laxton's Seedling, Royal Sovereign, Prince of Wales, Bedford Champion, Laxton's Latest, Latest of All, and Givon's Late Prolific.

European Vetch, largely grown by farmers in Central Europe as green fodder. In October, 1891, I sowed some of this seed gathered from plants crossed with the Vetch, and on the following January 1, 1892, I was surprised to find two little plants, each with one open flower and several buds. The flowers were very small, colour reddish-pink, and not of much value, the plants growing only to a height of 24 inches under glass. But I was satisfied with this for a start, and increased the stock of seed all that I possibly could. I crossed and re-crossed each year, and each new cross showed improvement over the previous one in size of flower, colour, length of stem, and in the plant itself. The first seedling of value which appeared was obtained from Blanche Ferry: it came of the same colour, but the plant was only 20 inches high, under glass, and bore only ten single flowers. But after much crossing and re-crossing with the parent variety, I secured fine, long-stemmed, large flowers, plants over 6 feet high, which were covered with masses of bloom all winter. The first variety was named Christmas Pink. I



(Photograph by D'Ath.)

FIG. 145.—EASTWELL PARK. MUSCAT OF ALEXANDRIA VINES FRUITING AT 15 MONTHS OLD.

FLORISTS' FLOWERS.

WINTER-FLOWERING SWEET PEAS.

"ABOUT 25 years ago," writes Mr. Anton C. Svolanek in the *Weekly Florists' Review* (America), "I made my first experiments in raising Sweet Peas in winter under glass. I tried all varieties which were at that time obtainable, but could never raise a plant which would give flowers before the latter part of the month of April. After several years of such experiments, I came to the conclusion that it was impossible to get Sweet Peas earlier than the time mentioned from the present existing varieties, so I started cross-fertilisation with other species of Lathyrus, but, for the first few years, without success. I obtained several new varieties, a few of which were double-flowered, but not one that was free-flowering, until I made a cross with the

now have a large number of varieties in all existing colours. All these varieties, when grown under glass, begin to bloom when 3 to 4 feet high, and continue flowering all winter, sometimes until June."

Mr. Svolanek states that he finds it necessary each year to grow his stock seed under glass, as in the beginning, because the varieties quickly revert to the ordinary type of spring-flowering Peas if not so handled. Last year he secured 40 pounds of stock seed in his greenhouses. This seed was sown in the Santa Clara Valley, California, and in a little valley in Austria, about ten miles distant from Trieste, where, for an area of about two miles in width and ten miles long, the climate resembles that of Santa Clara, but is rather more favourable for the Sweet Pea, owing to there being scarcely any rain during the flowering season.

NURSERY NOTES.

LOWFIELD NURSERIES, CRAWLEY.

THE village of Crawley, in Sussex, was in former days a post town of some importance for the Brighton coaches, it being situated from this seaside resort a distance of 21 miles, and from London 30 miles. At the present day it is reached in a little more than one hour from town by the London and Brighton Railway. A short distance outside the town is situated the nursery of Messrs. Joseph Cheal & Sons, which comprises about 110 acres devoted to most sorts of nursery stock. The specialities of the firm are fruit trees, Dahlias, ornamental trees and shrubs, and general landscape gardening, which latter branch has of late years necessitated the establishment of a London office. At the time of our visit, at the end of September, the Dahlias were still in their full beauty, and the many acres of these autumn flowers presented a glorious sight, notwithstanding the injurious effects of a frost the preceding night. The stock of single Dahlias in these nurseries is very representative, and Messrs. Cheal have either raised or introduced to commerce many of the best varieties of recent years. The best new "single" of this season is the variety Peggy, and this was seen among the extensive collection in company with Sunrise, Fugi San, Kitty, Mrs. T. W. Bates, Stromboli, and other new varieties of merit of this firm's raising. We have no space to enumerate the many other beautiful single, Cactus, show, and other varieties. Near the Dahlias was noticed a very large planting of *Kniphofia uvaria*, of which the firm possess a special strain. The plants had big spikes of finely coloured flowers, among which the bees and other insects were busy, and our attention was drawn to the fact that the tubes of the flowers were in hundreds of cases filled with the dead bodies of these insects. Whether the nectar had poisoned the creatures or if they had been suffocated when tightly squeezed in the flower we are unable to say, but we counted no fewer than 19 dead bees and wasps in a single flower-head.

The stock of fruit trees in these nurseries is extensive, and the soil is especially suitable for producing strong, clean growths. The stocks for the grafting of Apples are largely raised from cuttings inserted at the beginning of November, and each year more than 20,000 are raised in this manner. Of course this does not include the number of the Crab, or free stock, as it is known in nurseries, raised from seeds. In addition to the ordinary Paradise, the Doucin stock is used for many varieties of Apples, as the growth from this stock is very free, and the fruits finer than on many of the other kinds. The strongest of all the dwarfing stocks, however, is Rivers' Nonsuch, and on this are worked varieties that fruit heavily when in a young state. A breadth of 8,000 young Apple trees were all grafted on the free stock, as this must be used in the case of standard and half-standard trees that require a deep root-system to enable them to provide for increased transpiration, owing to the larger leaf area than the trained trees, and to act as an anchor to withstand rough winds. These young trees on the free stock were remarkably clean in bark, and showed that robust growth associated with trees of vigorous root-growth. A very large number of Apple trees were trained as cordon standards, the stem being "feathered" instead of clear of shoots, as in the usual type. These are in demand for suburban planting, where economy of space is a great consideration. The stock of Apple trees embraced trees of all types—bushes, cordons, pyramids, standards, &c.

The Pears represented a stock of many thousands, some on the Pear—which corresponds to the free stock of the Apple—and others on the Quince. This latter, being a dwarfing stock, is used for the smaller trained trees; the former

stock is suitable for the taller standard and half-standard trees. One breadth of the nursery, planted with maiden Pears, all on the Quince stock, contained 10,000 trees. Plums are also seen in these nurseries in quantity, and Peaches, Nectarines, Cherries, and other hardy fruits.

We were also shown many acres planted with small fruits, including 30,000 two-year-old transplanted Gooseberry and Currant bushes; the stock of these plants collectively is about 100,000. The training of espalier and other wall trees is done in the open ground, where the trees are grafted. The suitable shoots are tied to Bamboo canes, useless ones being entirely removed.

The stock of forest trees is accommodated in a separate nursery some distance from Lowfield; but in the home nursery ornamental trees and shrubs are everywhere met with. At the time of our visit many of them were in their autumnal colouring, and others in fruit. A very large number of the commoner kinds are propagated, as these are always in demand. Almonds and ornamental Peaches are worked on the common Mussel Plum, and this stock is also used for other ornamental species of *Prunus*. Many thousands of these were noticed, suitable for planting in their permanent quarters. Near by was seen a batch of 15,000 oval-leaved Privet, planted at 1 foot distance apart in the rows. The Bladder Senna, *Colutea*, makes a useful town tree, and it is a curious fact that seedlings raised from the red-flowered *C. cruenta* (syn. *purpurea*) have either yellow or reddish-brown flowers; but the yellow-flowered species produce none but yellow-flowered progeny. A very graceful plant is the *Tamarix*, and the variety of *T. japonica* known as *plumosa* is exceedingly handsome in its feathery growths, which are much thicker than in the type. The best for flowering is *T. hispida æstivalis*, of which some improved forms are grown at Lowfield. Another pleasing shrub seen was *Potentilla fruticosa*. There was a large stock of Lilacs of numerous varieties, worked on the common Privet. On this stock the Lilac flowers when very young, and is the best method of propagating this shrub for forcing purposes. It has the disadvantage, however, in throwing numerous suckers, besides which the plants are short-lived. *Leycesteria formosa*, *Lonicera involucrata*, *Lycium sinense*, shrubby *Hypericum*, *Philadelphus*, *Indigofera Dosua* (a form of *I. Gerardiana*), *Pittosporums*, *Nandina domestica*, *Xanthoceras sorbifolia*, *Polygonums*, including *P. baldschuanicum* (propagated from cuttings inserted in the open), *Hedysarum multijugum*, and a host of other shrubs were noticed, all in the best of health. Of the *Hypericum* the best for floral effect is *H. densiflorum*; the fruiting sprays of *H. Androsæmum* are extremely effective in the autumn. These two, with *H. uralum* and *H. galioides* (a form of *H. densiflorum*), constitute four excellent plants for general garden purposes. The Acers at the time of our visit were very beautiful. The nursery is especially rich in these trees, which are amongst the hardiest and best for autumn effects. The handsome Sugar Maple—*A. saccharinum*—had put on its beautiful tint of red, and we saw it in its full splendour. The Golden Sycamore—*A. lutescens* (a form of *A. pseudo-platanus*)—was very noticeable, but it is in the springtime, when the leaves are young, that its full beauty is apparent. *A. Lobellii* has pale, smooth, green bark, and red petioles to the leaves. The best of the variegated forms of *A. P.-p.* is *nana variegata*. *A. virginianum aurea variegatum* has beautiful cut foliage of a gold colour. *A. Volkemii* has strong growths and large leaves. *A. Heldreichii* has almost palmate leaves, like those of a vine. It makes a fine forest tree. Then the species of *Cornus* demanded our attention, for these in their leaf tints rivalled, and, perhaps, excelled, the Acers. All the forms of *Cornus alba* are most beautiful, including *C. a. sibirica*, *C. a. s. variegata*, *C. a. Spathii*, and *C. a. tartarica*. The golden form of *C. macrophylla* (*brachypoda*) is also a handsome shrub. The

collection of trees also included Limes, Elms, Catalpas, Willows, Acacias, *Prunus* species, Almonds, Conifers, &c. Examples of topiary work embraced more than 500 figures of animals and objects. One of the most remarkable examples is a set of chessmen worked in the Golden Yew, the tree representing the King being 10 feet in height.

BAMBOOS IN LEONARDSLEE GARDENS.

BAMBOOS appear to be equally well at home either in high or low situations, in dry or moist positions, on an island or by the sides of a lake, upon a bank or in the middle of rocks. In each of these different spots, however, they will probably require especial attention in the matter of watering, for if the soil about their roots becomes very dry, more than ordinary care is required to get the ball of earth thoroughly moistened again. There are no plants more ornamental in the dull months of the year than the Bamboos, and they create quite an Oriental effect in the garden. The plants may be moved at almost all seasons, but the roots should not be out of the soil longer than is absolutely necessary; indeed, special preparation should be made for the shifting. The hole should be prepared in readiness, and the plant's roots be thoroughly moistened. Mats should be in readiness to place over the roots directly they are exposed. A damp or wet day should be selected for the planting, and, should dry weather set in after planting, spray the foliage several times daily with the hose or syringe. The best season to select for planting, if many plants are to be moved, is the late spring, but in all cases the same preparation as advised should be made. A dull, drizzling day provides a favourable opportunity for the work.

In shifting large plants, a big trench should be excavated, in order that the roots or rhizomes be little interfered with, and, after planting, a few mats or a tarpaulin should be spread in front of the plant to protect it from the sun's rays for a few days.

Bamboos in large banks or clumps of several varieties are very effective features on large lawns or pleasure grounds, as are also a few plants interspersed amongst the ordinary subjects of a shrubbery. They afford relief and give a more picturesque effect. These plants have few insect or fungoid enemies, but rats are sometimes troublesome by burrowing under the roots. About 30 varieties of Bamboos are planted in these gardens. One plant of *Phyllostachys nigra* has flowered this season, but it is hoped no more will do so, as flowering is the precursor of their death.

All the plants have grown very freely this year, and the past summer seems to have suited them.

The following varieties have made exceedingly fine growths:—*Arundinaria falcata* has developed canes 3 feet higher than in any previous year. Many of the clumps have a spread of 15 feet, and the canes are 15 feet in height. This species is one of the most graceful and ornamental of all the Bamboos. The roots require some slight protection during severe weather.

A. nitida is one of the hardiest and best of the genus, and it is especially valuable for planting singly, as a specimen plant. It is often said that this plant prefers a shaded situation, but the several good specimens in these gardens are fully exposed to the sunshine. *A. nitida* has grown most freely this season.

Arundinaria anceps succeeds exceedingly well, and is perhaps one of the best. It has tall, dark, graceful canes, which resemble large plumes. This variety, when growing well, extends over the ground surprisingly quick, its rhizomes appearing here, there, and everywhere.

Bambusa fastuosa is a Bamboo of noble

appearance, and is very hardy. The plant is a quick grower, the shoots reaching to a height of 23 feet. The canes are of a rich olive green colour, changing a light brown, and bear dark green foliage. The whole shoot forms a plume-like growth, and is unrivalled for beauty. In these gardens young canes have this year grown to a length of 23 feet. When planted near to the roots of large trees, *B. fastuosa* should be given frequent and copious supplies of water. *B. palmata* has also made rampant growth, the canes attaining to a height of 10 feet.

Phyllostachys aurea is a strong-growing plant. It has developed canes 14 feet in height during the past year. The species is very distinct, is hardy, and one of the best for planting. *P. nigra* is a species readily distinguishable by its black canes. This plant is also very hardy. Several

with gold and glaucous beneath. This species needs careful lifting and replanting, or it soon becomes unsightly.

P. mitis forms a very large plant that grows very fast when thoroughly established, but it requires a warm and sheltered position. It succeeds best when planted on a slope that is screened with trees or tall Rhododendrons. *W. A. Cook, Leonard's Gardens, Herts.*

THE ROSARY.

ROSE DOROTHY PERKINS.

WHILE training the Roses on a Rose arch here recently I was surprised to notice what very strong growths the variety Dorothy Perkins had made in 1906. The Rose arch is 9 feet high and 7 feet wide, and one of the growths had

OXFORD.

(See figure 146, also Supplementary Illustration.)

THE Botanic Garden at Oxford is one of the oldest institutions of the kind in Europe, having been founded by the Earl of Danby in 1632. The ground belongs almost entirely to Magdalen College, and the chemical and physical laboratories maintained by that Society are only separated by a partition wall from the botanical laboratory and lecture rooms which front into the garden, and are shown in our supplementary illustration. These buildings used to form part of the plant houses, the lecture room itself being the old Orangery, but the general accommodation for teaching is in no way worthy of even a second-rate university.

The gardens have an old-time appearance, in



FIG. 146.—A SCENE IN THE BOTANIC GARDENS, OXFORD.

plants here have reached a height of 22 feet. When planted in a suitable position, few plants are more handsome or decorative than is this Bamboo.

P. Quiloi has grown very freely during the past summer. The polished canes are of a dark green colour; the leaves are also a deep green, and slightly larger than any of the other Bamboos. A well-grown plant forms an ideal specimen.

P. viridi-glaucens is represented by a clump 80 feet in circumference, and is an object of great beauty, especially when the long shoots are swayed by the wind. The plant is perfectly hardy, and our specimen has up to the present time made no attempt to flower.

P. Castillonis has tall, golden-coloured canes. The long leaves are variegated, being striped

passed over the top and dropped to within 2 feet of the ground on the other side. I measured this growth and found it was 18 feet 6 inches in length. It was flowering on a length of 16 feet out of the 18 feet 6 inches. I thought it was a very good growth for one year, considering there were 16 growths from the same root-stock, and these varied in length from 12 to 18 feet, covering a space 8 feet wide on the arch. The Rose had been planted three years. The old growths that have flowered are usually cut hard back to the base each year. No other variety of Rose on this arch had made such long growths, although many had shoots 15 to 16 feet long. This year, however, Paul's Carmine Pillar has made quite 18 feet of growth. *Geo. Gummer, North Manor Gardens, Barm Stacey, Hants.*

spite of the replacement, about 17 years ago, of the rambling beds of sinuous pattern and geometrical design by the more convenient if less picturesque rectangular ones of to-day. A number of fine trees—too many, perhaps, considering the small size of the garden, which is only about five acres in extent—are to be found here. A large Copper Beech, a fine example of *Sophora*, and a pretty specimen of the Fern-leaved Beech, together with specimens of *Fraxinus Ornus*, *Taxodium distichum*, *Pyrus intermedia*, &c., form striking objects of beauty in the garden, whilst a pleasing effect is rendered by the grey stone walls clad with creepers and shrubs of various kinds. Amongst these latter are to be seen fine specimens of *Periploca græca*, *Colletia cruciata*, *Ercilla volubilis*, *Bupleurum fruticosum*, *Azara microphylla*, *Pomegranate*, &c.

By means of an iron gateway in the south-west wall of the main garden access is afforded to a small enclosure, shown in the illustration at fig. 146, in which a small collection of hardy Water Lilies and a few bog plants are grown. The enclosure is circular in outline, and is partly banked up by brick staging, on which are arranged a selection of Alpine and other small plants which are cultivated in pots. Apart from this, there is no other attempt made at growing Alpines in the part of the garden visible to the public.

The principal plant houses are situated on the south-eastern side of the garden, overlooking the river Cherwell. They were built on the corridor plan, under the direction of Professor Vines, F.R.S., the present occupant of the Sheradian Chair of Botany in the University. There is a moderate collection of *Nymphaeas* in the Water Lily house, but the general impression gained by a walk through the houses is that they are overcrowded with many specimens that might well be given away or consigned to the rubbish heap. There are, however, interesting plants among them, such as *Livistona inermis*, *Araucaria Rulei*, *Dioon edule*, *Marattia fraxinea*, *Klugia zeylanica*, &c.

The principal treasures of the Botanical Gardens are to be found in the library, for it contains valuable and rare books almost in profusion. Amongst them may be mentioned the volume of plates reproduced from the MS. of Dioscorides in the Royal Library at Vienna. Only two copies of this work are known to exist, and the other, which belongs to the Linnean Society, is inferior to the Oxford volume. Here are also to be found the magnificent original drawings of Bauer for the illustration of the *Flora Græca* and the *Fauna Græca*.

The library contains a number of valuable manuscripts also, and amongst them is the unpublished volume I. of Morison's *Historia*, which was written by Bobart.

Although the gardens and the buildings are picturesque and beautiful, one cannot visit them without a feeling of regret that the University does not do more to enable them to be kept up in accordance with the development of modern botanical requirements. Cambridge, and the newer universities that have been established and are still being formed throughout the country, have recognised the importance of botany, not only as an academic but as an economic science. They are all affording increased facilities for its proper pursuit, whilst Oxford, so far as its provision for accommodation for students is concerned, continues to content itself with its beautiful grey stone walls and the glamour of its old-time laurels.

"Rural Economy" has recently been established in a new laboratory-building a mile away, but the results of starving the botanical establishment in the old garden are only too apparent.

The Week's Work.

THE KITCHEN GARDEN.

By WILLIAM H. HONNESS, Gardener to C. COMBE, Esq., Cobham Park, Surrey.

Carrots.—Late crops of Carrots that were raised from seeds sown in July, as advised, should now have some partly decayed leaves spread between the rows to afford protection during severe weather, if the roots are to be allowed to remain in the ground until they are required for consumption. The reason for using the leaves in a partly decayed condition is that they will not be blown about by the wind, which would cause an untidy appearance. Late Carrots have succeeded well this season, especially the variety Early Gem.

Scakale.—The plants that are to be forced in the open ground do not yet appear to have ripened up sufficiently to render it advisable to commence forcing. Some severe weather is required to bring about this essential condition,

and in the circumstances it will be better to postpone making a start for another week, or even fortnight, than to start with immature crowns that would only be capable of producing indifferent results.

Globe Artichokes.—Sufficient side-shoots for planting again next spring should be potted-up and placed in a cold frame, or the plants may be protected as they stand by covering them with long litter from the stable. As this material would need to remain on the plants for a considerable time, and through very bad weather, sufficient support to carry the weight of the litter, and to prevent it from bearing heavily on the crowns of the plants, when it becomes wet and heavy with rain and snow, should be afforded by placing a few short sticks round and close up to each plant. It will generally be found that Artichoke plants treated in this manner will be capable of standing through the winter without suffering harm, but unless the sticks are used many would damp off.

Tomatos.—Plants growing in pits or frames, and now commencing to ripen fruits, may be greatly assisted by occasional weak applications of liquid manure water, also of nitrate of potash, at the rate of half an ounce of nitrate to each gallon of clear water. The nitrate can be gradually increased to one ounce to the gallon, with two or three alternate applications of clear water. Tomato plants require fairly liberal treatment, combined with firm potting. For raising succession plants, seed should now be sown in pans containing light soil and placed in an atmospheric temperature of 50° to 55°, choosing seeds of any free-setting variety. Sow the seeds thinly, and as soon as the plants are large enough, pot them singly in small pots and place them well up to the roof glass. Re-pot them before the roots suffer from confinement in the small pots. Plants now in flower should be helped to "set" the fruit by drawing a camel's hair brush lightly over each bloom to distribute the pollen.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq., Norwood, Alloa, Clackmannanshire.

Pot vines, which are expected to supply the earliest crop of Grapes, should now be placed into heat, if forcing has not already commenced. The pit having been made-up previously with fresh stable manure and leaves, these fermenting materials will produce a bottom heat, and the pipes underneath will supply the heat when more is required. Pot vines should not be subjected to much bottom heat at the first, and the less artificial heat employed the better the vines will succeed. Maintain the atmosphere in a moist condition by damping the paths twice daily. Admit a little air through the top ventilator when the weather is favourable, but close it again early in the afternoon whilst the sun is still shining. The atmospheric temperature in the pit should be 50° at night and 60° by day, rising with sun-heat to 65°. This heat will be sufficient for the vines until the buds break into growth, when the temperatures should be gradually raised by 5°. Give water very cautiously, as the roots require very little until the vines have made considerable growth. Any water to be applied to the roots should first be heated to the same temperature as that of the atmosphere of the house.

The early vinery.—The Grapes in the early vinery ripen in May. Such a house should now be closed down for starting. Damp the paths slightly twice each day, and apply a little heat during very cold days. At the time of starting, an atmospheric temperature of 50° should be maintained at night and 55° by day. This little warmth and a moist, freely circulating atmosphere will cause the vines to swell their buds. Take care to see that the outside border is protected with a mulch and thatched with straw or other material; this must be well done in order that rains and melting snows will be thrown off.

Cucumbers.—Plants which are swelling some fruits and setting others require to be watered with very great care, whether growing in pots or in the border; and the water employed should be heated to the same temperature as the atmosphere of the house. Do not syringe the plants during winter. A humid atmosphere can be maintained by damping the paths, but this

should not be done very frequently. On sunny days a little air may be admitted by the top ventilator only. Do not employ very much artificial heat at any time. Should red spider or thrips attack the plants, fumigate the house lightly with the XL-All vaporiser, and repeat the operation on the following evening. An atmospheric temperature at night of 65°, with 70° by day, rising with sun-heat to 80°, will favour their growth. The bottom heat should be 70°. Keep the growths pinched, and never allow overcrowding of foliage. Train the shoots regularly over the trellis. The female flowers may require to be pollinated by artificial means.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

Disused burial grounds.—Within recent years Parliament has decreed that, under certain well-defined conditions, all disused burial grounds are to be maintained by the public authority in whose boundaries they are situated, and all expenditure incurred in their upkeep may be charged to the rates. Very naturally, they come under the charge of the Public Parks Department. Although many of these grounds already handed over to the care of public bodies are technically "disused," they are only so in that they contain no new spaces which can be let for burial purposes. Owners of existing grave spaces continue to bury within them so long as they are not filled up. This is, of course, always provided that the Home Office has made no definite order to close the ground against all burials. It is only under most exceptional circumstances that the Home Office can be induced by any authority to interfere with individual rights in this way, a fact which gives rise to an anomalous state of affairs in that, while the responsible Council has to pay for the upkeep of the ground, it does not receive a single penny from those who continue to use it for its original purpose. Excepting where old burial grounds are fairly extensive and have been well laid out in the first place, they are somewhat difficult to turn to any great public advantage. In some towns, where they lie midway between two busy thoroughfares, they are used by pedestrians as a connecting link, and are in this way of considerable value. Except under such circumstances, disused burial grounds are not usually frequented by great numbers of visitors.

Their utilisation.—Public sentiment prevents such places from being utilized for ordinary recreative purposes, however much they may be needed for such a purpose in their immediate neighbourhood. The most that can usually be done is to keep them clean and tidy and provided with seats, and where possible have them furnished with a few flower beds, when they are thrown open as a retreat from the busy streets for old folks and young children. Under ordinary circumstances the presence of numerous gravestones and mounds makes it very difficult to keep cemeteries at all times in a presentable condition. In old burial grounds, where most of the stones and graves are becoming dilapidated, this difficulty can be overcome by laying them flat, and levelling and turfing the intervening spaces flush with the surface of the stones. In this way the grass can always be cut with a mowing machine, thus giving a much neater appearance to the ground than where mounds are allowed to remain, the grass upon which can only be cut by means of a hook or scythe. It should, however, be borne in mind that before interfering with the graves in this manner due notice ought to be given, so that those having any interest in the ground may be acquainted with the intention of the authorities. This is best done by posting notices at the entrances to the cemetery and by advertising in the local papers what it is proposed to do. A little attention to these apparently small details often prevents subsequent trouble and unpleasantness. Bearing in mind the fact that to many people everything appertaining to the place of the dead becomes almost sacred, great care should always be exercised in carrying out alterations and improvements in disused cemeteries. On no consideration should any tombstone, however dilapidated, be removed from the position in which it marks a grave; the very fragments even ought to be kept together and made as secure as possible.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Heating and ventilation.—For several months to come we shall have to rely chiefly on fire-heat for the proper maintenance of the atmospheric temperatures in the houses, and it will be necessary to use this with great care and discretion so that the plants may not suffer during winter. Prevent fluctuations in the temperatures and excess of fire-heat as far as is possible, both conditions being extremely injurious to Orchids. At night, when the weather is mild, the heat of all the houses should be several degrees higher than when it is cold and frosty, and on bright days higher than on dull days. The greatest heat during the 24 hours should be at mid-day, and lowest during the early hours of the morning before daylight. The winter temperatures for the various divisions, with a range of 10° between the two extremes, should be as follows: East Indian house, 60° to 70°; Cattleya, Mexican, and intermediate houses, 55° to 65°; Masdevallia and Odontoglossum houses, 45° to 55°. When, through severe frosts and cold boisterous weather, excessive fire-heat would be necessary to obtain the higher temperatures, the atmosphere of the houses being drier than usual, the lower temperatures will be best, and at such times even a degree or two lower for a short time will cause no harm. In ventilating Orchid houses through the winter months the aim should be to admit as much fresh air as possible without chilling the plants. High and lofty houses will not require nearly so much air as small low-roofed ones. It is impossible to lay down hard and fast rules, as so much depends upon the position and construction of the houses.

Damping-down.—Houses that are situated on high and exposed elevations will require more frequent dampings to maintain sufficient atmospheric moisture in them than those houses which are in low-lying districts. For instance, at Burford the houses are in a very low-lying position and as regards the Cattleya houses, no syringing or damping-down is necessary from the beginning of November until the end of February, the usual waterings of the plants which is done twice a week being quite sufficient. The pseudo-bulbs and leaves of Cattleyas and Lælias are particularly liable to decay during the winter months, and this condition is generally brought about either by affording too much water at the root, or by having an over-abundance of moisture in the atmosphere. If it is caused by improper atmospheric conditions, the plants will require a warmer and drier atmosphere, but if decay arises from overwetness at the roots the plants will be constitutionally impaired and may not recover. The paths and stages of the East Indian house need to be well syringed every morning immediately the heat of the structure has risen to the proper day temperature, and again early in the afternoon. The intermediate house, containing Cymbidiums, Vandas, Cypripediums, Maxillarias, Epidendrums, Miltonias, Sobralias, &c., will require damping-down twice daily. The cool or Odontoglossum house, if a span-roofed house running north and south, will need damping once or twice each day, according to the weather outside, but one with a northern aspect will need very little special damping until early in spring.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. Ford, Pencaer, Cornwall.

Winter protection.—Nothing is better or more effective for protecting the roots of plants or shrubs from cold than a layer of fallen leaves. A layer 3 or 4 inches thick will keep the ground warm and soft even during very hard frosts. In many gardens it is necessary to protect Kniphofias (Tritomas) during the winter. The leaves should be drawn up together and tied, placing a layer of leaves or ashes around the crowns. If leaves are used a slight sprinkling of soil over the surface will serve to keep them in place. Kniphofia caulescens, being more tender than the others, needs to be planted in a warm border, and should have a heap of broken coke piled around its stem; this is a good method of protection for all plants, shrubby or herbaceous, which suffer more from excessive

moisture than from a low temperature when the conditions are dry. After the first frost the leaves of Gunneras should be cut off, and when the stalks have been removed, the leaves may be inverted over the crowns to afford protection. Where frost more severe than 15° Fahr. is anticipated, it is necessary to place dry bracken or straw around the crowns; a few sticks laced across the covering with each end pushed into the ground will keep it in place. The best method of protecting tender young trees and shrubs is to enclose them with wire netting—if rabbits abound the netting is usually already there—9 inches or so clear of the outer leaves. Place over the roots 4 inches of freshly fallen leaves, and on this loosely place some bracken. If the shrub is deciduous and of doubtful hardiness, place the loose bracken around the whole of it. Finally stick a few large branches of some evergreen—Rhododendron ponticum answers best—in the ground so that the leaves are around the netting and over the plant. This method affords ample protection, and at the same time admits a fair amount of light and air to the plant. Tender wall shrubs should have a few pieces of bracken or small branches of an evergreen shrub placed amongst the growths.

Roses generally are best when planted in November, but if the soil is very heavy and retentive, and cold or wet weather should set in, the work should be delayed until the spring. It is assumed that the beds or borders were previously prepared, so that as soon as the plants arrive from the nursery they may at once be planted. Lay out each root separately, and make the soil firm by treading. Beyond the cutting away of bruised or broken roots, no pruning should be done at this period. An efficient stake should at once be affixed to each plant so that it may not be blown about by the wind. In districts where winter protection is necessary for Roses, such material as dry bracken or loose stable-litter should be kept at hand in readiness for use. If a few Spruce branches are stuck in the ground around, they will effectively screen the plants from winds.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Nerines.—As these plants pass out of flower, place them in a good position near the glass, and apply liquid manure to the roots in order to get the foliage to develop perfectly. When the foliage has fully grown and shows signs of ripening off, decrease the water supply gradually until it is entirely stopped. Keep the plants after that stage in a hot, dry position, thoroughly baking the bulbs by sun-heat. Do not disturb the roots until this operation becomes absolutely necessary, since Nerines appear to flower better if left undisturbed as much as possible.

Plumbago rosea.—The graceful winter-blooming variety, known as P. rosea coccinea superba, now coming into flower, should be afforded a very light position as near to the glass as possible, in order that the flowers may perfectly develop their delicate colours. Do not syringe the plants overhead, but if they are in a very dry position damp lightly between the pots. As the flower-spikes continue to develop, an atmospheric temperature at night of 50° to 60°, with the usual rise in the day-time, will be sufficient; at that period the atmospheric temperature should be maintained less moist, in order that the flowers may continue in good condition for a considerable period. They possess a most effective colour for dinner-table decoration, for which purpose the plants should be arranged with some dwarf, white-flowering plants such as Roman Hyacinths and Lily of the Valley, with an edging of Ferns and Grasses.

Bouvardias are now at their best, and care should be taken to prolong their season as far as possible. Bouvardias are sometimes kept in too great a heat, and in consequence the flowers soon pass, and the plants themselves become preyed upon by insect pests. When in bloom an atmospheric temperature of 55° to 60°, with ventilation on all favourable occasions, is sufficient. King of the Scarlets, Alfred Neuner, President Cleveland, President Garfield, Priory Beauty, The Bride, and Vreelandii constitute a good selection of the various colours.

Watering plants in winter.—At this season all watering should be done as early in the day as possible. Be careful not to apply water where it is unnecessary; it is better to take a little longer time and examine every plant, thoroughly soaking the roots of such plants only as really require moisture.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to Lord Clinton, Bilton, East Devon.

Pruning.—This is an important work, and should be performed by men of experience, for an injudicious use of the knife has ruined many a good tree. The aim of the pruner should be to maintain a shapely bush or tree at its correct shape, or to lay the foundation of a good tree in the case of young specimens. It is important that light and air gain admittance amongst the branches, as half-ripened wood is not conducive to fruitfulness. The pruner should be acquainted with the habit of fruiting of the different varieties. Most kinds bear these fruits on spurs, but several develop fruit on well-ripened shoots made the previous year, and a knowledge of these particulars is required before the work can be properly performed. Pruning should be carried out while the weather remains mild, as more work can be done and the conditions are much better for the worker when the weather is warm. The first trees to be pruned should be those that drop their leaves first. In these gardens we commence with Cherries on north walls, cutting back all spur growths of the current season to two buds, reserving enough leading shoots to have them not less than 3 inches apart, and a few to take the place of worn-out branches. Sweet Cherries having large leaves require their branches further apart than Morellos, and 9 inches to 1 foot will not be too much. These, like the Morellos, bear their fruit on the current year's wood as well as on spurs.

Pruning wall trees.—The Plum, Apricot, and Pear require similar treatment to that recommended for the Cherry. Plum and Apricot trees often require their branches to be re-adjusted, a branch here and there dying occasionally without any apparent cause. Pruning and training being carried out at one operation, the dead branches should be cut out before commencing to train the shoots. Plum, Apricot, and Pear trees produce their fruit principally on "spurs," though more or less on matured shoots of the previous summer's growth, especially Plums and Apricots. Therefore, it is advisable to retain the most suitable growths so long as their retention will not cause over-crowding. Strong leading shoots should be shortened to about half their length; this checking of sap will induce the wood buds to push out in spring, the most convenient being retained to form spur-growths. Medium shoots may be left intact, with the exception of those of the Pear; these usually form a blossom bud at the point, and need, therefore, to be taken out if an extension of the tree is desired. Long-established trees, with unsightly spurs, may have a few of the spurs cut out annually, and if a saw has to be used the wound should afterwards be made smooth with a knife or chisel. These remarks are applicable to espalier trees in the open, and to cordons trained along wires. Trees of any form, which have been recently planted, should not be pruned until spring.

Bush and pyramid trees of the Apple, Pear, and Plum require similar treatment as regards the spurs, cutting back to within two buds of their origin all growths made this season, except in the case of some few varieties such as Jargonelle and Beurré Superfin Pears, Lady Sudeley and Irish Peach Apples, which in many instances form natural spurs, or rather blossom buds, without being stopped. Extension shoots which exceed 1 foot in length should be shortened to within 8 or 9 inches of their origin, and any branches likely to cause over-crowding in any part of the tree must be cut hard back.

Peach trees.—These are retaining their foliage for a longer time than usual. If a twig or broom be drawn lightly towards the points of the shoots, it will rid the tree of those leaves that have performed their functions and are ready to fall, but it is unwise to attempt to debilitate the trees whilst the leaves are still firmly adhering to the shoots.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, NOVEMBER 23—

Merley and Dr. Paxton Soc. Chrys. Sh.

TUESDAY, NOVEMBER 26—

Royal Hort. Soc. Coms. meet. Brit. Gard. Assoc. Ex. Council meet.

THURSDAY, NOVEMBER 28—

Exhibition of Colonial Produce at Hort. Hall, Westminster (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich 41.8°.

ACTUAL TEMPERATURES:—

LONDON, Wednesday, November 20 (6 P.M.): Max. 49°, Min. 43°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, November 21 (10 A.M.): Bar. 30.3; Temp., 46°; Weather—Overcast.

PROVINCE.—Wednesday, November 20 (6 P.M.): Max. 45°, Guildford; Min. 39°, Scotland N.E. Coast.

SALES FOR THE ENSUING WEEK.

MONDAY—

Roses in variety, at 67 & 68, Chapside, E.C., by Protheroe & Morris, at 1.30.

MONDAY AND WEDNESDAY—

Sale of Dutch Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY TO FRIDAY—

Dutch Bulbs, at 67 & 68, Chapside, E.C., by Protheroe & Morris, at 10.30.

WEDNESDAY—

Roses at 1.30. Palms, Azaleas, &c., at 5, 67 & 68 Chapside, E.C., by Protheroe & Morris.

A consignment of Lilliums and miscellaneous Bulbs, at 67 & 68, Chapside, E.C., by Protheroe & Morris, at 2.

WEDNESDAY AND THURSDAY—

Clearance Sale of Nursery Stock at The Nursery, Rothwell, near Leeds, by Protheroe & Morris, at 11.30.

THURSDAY—

Sale of Nursery Stock at Claremont Nursery, West End, Epsom, by Protheroe & Morris, at 12.

FRIDAY

Orchids in variety at 67 & 68, Chapside, E.C., by Protheroe & Morris, at 12.45.

James
Herbert
Veitch.

It is with feelings of the utmost regret we have to record the death, on the 13th inst., of James Herbert Veitch, at the age of 39 years. The short, strenuous life of the deceased nurseryman has been marked by several incidents of unusual interest. Born at Chelsea in the year 1868, his education commenced at the Crawford College, Maidenhead, and was continued in Germany and France. He commenced work at Chelsea in 1885, and when 23 years of age, the young man undertook a voyage to India, the Straits Settlements, Japan, Corea, the Australian Colonies and New Zealand, for the purpose of studying the vegetation of those regions, the conditions of the native habitats of many species of plants that are cultivated in gardens in this country, and especially to ascertain whether British gardens might be still further enriched by the introduction of new species from the rich flora these favoured countries were known to possess.

Many of our readers will doubtless remember that extracts from the letters addressed by the traveller to his uncle, Mr. Harry J. Veitch, were printed in these pages under the general heading "A Traveller's Notes," the first contribution appearing in the issue for March 12, 1902, and the last in that for December 15, 1904. These letters described the principal features of the botanic and other public gardens, nursery establishments, and private gardens Mr. Veitch visited. After his return home at the end of 1893 he was prevailed upon to revise and amplify the text for publication in a separate volume. His

work was issued in 1896, the title being the same as that previously used for the notes which appeared in these pages. *A Traveller's Notes* was circulated privately, and contained 220 pages of text, together with maps and numerous illustrations prepared from photographs taken by the author. It was printed on thick, art paper, on which the illustrations show to excellent advantage, and some of the more important were printed on parchment. The work will maintain its value in future years as a means of spreading reliable information upon the plants introduced to our gardens from the countries already mentioned.

Upon returning to England Mr. Veitch was again associated in the management of the Chelsea Nurseries. In 1898 advantage was taken of the new company law and the business was formed into a private limited company. Mr. Harry J. Veitch retired from the management in 1900 and Mr. James Herbert Veitch assumed the responsibilities of the post



THE LATE JAMES HERBERT VEITCH.

of managing director, his younger brother, Mr. John Gould Veitch, being appointed Secretary.

Very soon after this event Mr. James Veitch conceived the idea of sending a special representative to China for the purpose of collecting seeds and specimens of new species of trees and shrubs and other plants for introduction into England. In taking this step he followed the best traditions of the firm, for Messrs. Veitch had previously despatched 21 travellers to various parts of the world on a similar errand, including, amongst others, the Brothers Lobb, John Gould Veitch, P. C. M. Veitch, F. W. Burbidge, Walter Davis, G. Kalbreyer, and J. H. Chesterton. It is recalling but recent history when we state that Mr. E. H. Wilson was selected to proceed to China in April, 1899, and our readers will remember that his tour was so successful that, after spending the summer of 1902 in England, he was again despatched in January, 1903, to the extreme west of China, and the border of Thibet, a thousand miles further west than the former field of his exploration. One of the special objects of the

second visit was to obtain seeds of *Meconopsis integrifolia*, and so successful was Wilson that the plant has already become a common species in European gardens. To the commendable enterprise thus shown by the firm of Veitch, cultivators also owe the introduction of a very great number of new species of trees and shrubs, including many Conifers, and herbaceous and annual flowering plants, a considerable proportion of these having already formed subjects of illustration in these pages.

The next and last important task undertaken by the deceased gentleman was the compilation of the *Hortus Veitchii*, which was published as recently as last year. This work relates the history of the nurseries of Messrs. Jas. Veitch and Sons, affords biographical notes of the founders of the firm, also of the principals, botanical collectors and hybridists employed by them, and it further contains a list of the most remarkable plants that have been introduced from abroad or have been raised in this country, with descriptions and references of publication. It contains upwards of 540 pages of text and 50 illustrations, and was printed for private circulation only. This book is a record of good work well accomplished such as any firm might be justly proud to possess, and its compilation necessarily imposed a large amount of extra work upon the author, who was already bearing the entire responsibility of the management of the business. It was during the preparation of the *Hortus Veitchii* that Mr. Veitch showed unmistakable signs of failing health, and shortly after its publication he was obliged to retire from active work, his place being filled by Mr. Harry J. Veitch, who again returned to the position he vacated in 1900. Mr. James Veitch subsequently removed to the neighbourhood of Exeter, where his health gradually declined until on Wednesday week last he died from an attack of paralysis. He was a man of extraordinary energy, and during his brief business life attempted more than it is possible for one man to perform without suffering the effects of over-work, insisting in devoting his personal attention to details the ordering of which might very well have been left to others. He was a Fellow of the Linnean Society, for some years a member of the Executive Committee of the Gardeners' Royal Benevolent Institution, and had also served upon the Fruit and Vegetable Committee of the Royal Horticultural Society. Mr. Veitch's labours, as we have endeavoured to show, have been strenuous, and their efforts will continue to be seen in future years, although his business career only extended over a period of 22 years. His premature death will excite the greatest sympathy for his immediate relatives and especially for his widow. His father was John Gould Veitch, who was born in 1839 and died in 1870. Mr. Veitch leaves no children; his nearest relatives at present in England are his brother, John Gould Veitch, his uncle, Mr. Harry J. Veitch, his cousin, Mr. Morgan H. Veitch, and Mr. P. C. M. Veitch.

The interment was at Exeter on Monday last, in the presence of Mr. Harry J. Veitch, Mr. John Gould Veitch, Mr. P. C. M. Veitch, and other relatives and friends, including Mr. T. H. Slade, gardener at Poltimore, Mr. J. Mayne, gardener at Bicton, and Mr. Garland, formerly gardener at Killerton.



Photograph by W. J. Tasey

VIEW IN THE BOTANIC GARDEN, OXFORD, SHOWING THE LECTURE-ROOM AND ENTRANCE-GATE,
WITH MAGDALEN COLLEGE IN THE BACK-GROUND.

ROYAL HORTICULTURAL SOCIETY.—At the meeting of the Committees on Tuesday next, November 26, Mr. FRANK GOLSWORTHY is expected to exhibit some floral pictures, including some Himalayan Rhododendrons, Narcissus, Roses, &c.

—The show of Colonial-grown fruits, vegetables, and Colonial-preserved fruits will be held at the Society's hall, Vincent Square, on the 28th and 29th inst. Conjointly, an exhibition of bottled British-grown fruits will be held. A series of lectures and demonstrations on fruit bottling will be given by Miss EDITH BRADLEY, at 3 p.m. on the first day and at noon and 3 p.m. on the second day.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting will be held in the Lecture Hall of the Institution on Monday, November 25, at 8 p.m., when Mr. SABIN will re-open the discussion, adjourned from March 18 last, on the paper read by Mr. AUBREY J. SPENCER, on February 25, entitled "The Agricultural Holdings Act, 1906."

SOCIÉTÉ FRANÇAISE D'HORTICULTURE DE LONDRES.—The annual dinner will take place on January 18, 1908, at the Café Royal, Regent Street, London, W., at 7.30 p.m. Mr. HARRY J. VEITCH will preside, and will be supported by M. PHILIPPE DE VILMORIN and others.

UNIVERSITY OF LONDON (ADVANCED LECTURES IN BOTANY).—A course of eight lectures on the "Function of the Mineral Constituents of the Soil on the Nutrition of Plants," by Mr. A. D. HALL, Director of the Rothamsted Experimental Station, was begun on the 11th inst. at the Chelsea Physic Garden. Mr. HALL began by setting out the analyses of the ash of a series of typical plants, in which were to be found a comparatively small number of constituents: Potash, soda, lime, magnesia, and a little iron among the metals; phosphorus, sulphur, chlorine, and silica among the non-metals. Traces of a large number of other elements have been found from time to time in the ashes of various plants, since plants must take up a little of whatever is present in the soil; but their occurrence is irregular, and has little significance in the nutrition of the plant. To grasp the true significance of the proportions present in the ash, it is necessary also to know the weight the plant usually attains when occupying a given area of ground, as in a field crop, by which means the amount of each constituent withdrawn by the plant from the soil can be calculated. Various analyses were then given of crops grown at Rothamsted to show to what extent the composition of the ash of a given plant will vary under different conditions of soil or of season, and it was found that the variations, never very great, were more induced by season than by soil. The plant, in fact, reacts against changes in the composition of the medium in which it grows and strives to maintain a uniform composition. This led to a consideration of LIEBIG's theory that the composition of the plant serves as a guide to the manure it requires, so that the proper manure for a given crop would be a liberal allowance of the same composition as that which it will ultimately take away from the soil. This theory has been found invalid when checked by the result of field experiments; and it also fails because it does not take into account the soil, which itself contains the necessary constituents for a hundred or more full crops.* The need for manure rests upon the fact that the valuable constituents in the soil are but sparingly soluble, so that it largely depends upon the deep or shallow rooting habit of the plant, the duration of its growth, &c., whether it can obtain a sufficiency of a given constituent from the soil, or whether it

requires the assistance of a little more in an active form as manure. In the second lecture on Thursday, November 14, Mr. HALL dealt with the converse proposition of how far the composition of a plant growing upon a given soil will indicate the richness or poverty of that soil. To some extent the plant can be used as an analyst of the soil; for example, the composition of Barley straw or of Mangels grown without manure will indicate the need or otherwise for manuring with phosphates or potash salts. The mode of entry of the mineral constituents into the crop was then considered; it is necessary that they should become dissolved in the soil water, whereupon they pass through the cell walls of the root hairs by osmotic diffusion. As the living protoplasm of the plant withdraws a given constituent from this solution, more will be able to diffuse in from the soil water outside; is in this way the plant is able to discriminate between the substances presented to it, accumulating, for example, more potash than soda, although the soda may be the more abundant in the soil water. The plant may exercise its selective action between the acid and basic constituents of a given salt: thus from sodium nitrate it will take more nitric acid than soda, leaving behind the soda in the soil combined with carbonic acid excreted from the root. The alkali thus set free may have a deleterious effect upon the tilth of the soil, as is not infrequently seen in the field. The supposition that the acid sap within the roots of plants exercises a solvent action upon the soil particles was considered to be unfounded, carbon dioxide being the only excretion which solvent actions are due. The lectures will be continued on Monday and Thursday afternoons at 5 p.m. at the Chelsea Physic Garden.

A NATURAL BERBERIS-HYBRID IN ENGLAND.

The Rev. E. S. MARSHALL, writing in the *Journal of Botany*, records the discovery of a natural hybrid between the common *Berberis vulgaris* and *Mahonia Aquifolium* in Somerset. He describes it as "possessing thorns, mostly in groups of three, as in *B. vulgaris*, but the foliage leaves are simple, coriaceous, glabrous, and probably evergreen. The fruits, which are produced abundantly, vary from round to oval, and are bright red when half-ripe, becoming almost black, with a glaucous bloom and crimson juice when mature. Dr. FOCKE, in his *Pflanzen-Mischlinge*, remarks that: "... the species of *Berberis* cross readily with each other, and recalls the fact that a hybrid, *B. Aquifolium* × *B. fascicularis*, was distributed by Rivers before 1850." Mr. MARSHALL believes his plant to be the first known instance of the occurrence of a quasi-wild hybrid in the genus.

FOREIGN GARDENERS IN FRANCE.—A society called *Ausländischer Gärtnerverein* exists in Paris, and the members numbering about 50 and represent horticulturists of ten or more different nationalities. The general meeting was held recently, when the Chairman gave a review of the past half-year's work. The meetings held numbered 25, and there had been 12 excursions during that period. The German language is employed at the meetings which are held each Saturday.

PLUM TREES BEARING A SECOND CROP OF FRUITS.—An unusual instance of second cropping is brought to our attention by Mr. PERRIN, of Reading. The first crop of fruits ripened in the third week of July and the second crop in the fourth week of October. Our correspondent states that the tree is 12 or 13 years old, and at the second cropping it bore four dozen fruits. The secondary blossoms were produced from the old wood, and these buds were not observable until the earlier fruits had made considerable growth.

THE "SCHNEIDER" BANQUET IN LONDON.

On Saturday last a few English friends of Mr. GEO. SCHNEIDER met together at the Café Royal, Regent Street, to celebrate, as his French friends have already done, his recent decoration by the French Government. Mr. HARMAN PAYNE presided. Mr. W. HIEHLE read letters from numerous friends regretting their inability to be present. The Chairman briefly reviewed Mr. SCHNEIDER's many services to horticulture, and especially in connection with his work as President of the French Horticultural Society of London. A presentation of a handsome silver hot-water jug and cake-basket was then made in the name of Mr. SCHNEIDER's English friends. Mr. SCHNEIDER replied briefly returning thanks for this and the many other friendly demonstrations of regard of which he had lately been the object.

NEW SALVIAS.—Amongst the *Salvias* that have been raised within the last few years, the variety known as Feuerball (Fireball) has attracted a good deal of notice on the Continent. It originated as a cross between *Triumph* × *Rudolph Pfitzer*, and is a very handsome plant, especially when grown in masses. But, writes M. L. DURIÉ in the *Revue de l'Horticulture Belge et Etrangère*, it is easily surpassed by a newer variety known as Zurich, so named because it originated in the Municipal Gardens of that city. It flowers a fortnight earlier, and is of a more compact and floriferous habit than Feuerball. Both sorts, however, are eclipsed by a still newer introduction, *Zuchterzwerg*, which, as its name implies, is also a dwarf variety. M. DURIÉ expresses the opinion that the new *Salvia* has a great future before it, and describes it as of very good habit, reaching a height of 12 to 14 inches, and as forming literally a mass of brilliant red blossoms, like those of Feuerball, whilst it shares with Zurich the great merit of early-flowering.

"FORAGE CROPS FOR SOILING, SILAGE, HAY, AND PASTURE."

—Although this book deals with the subject of fodder from the standpoint of the American agriculturist, there is much in it which may well arrest the attention of the British farmer. The systems of intensive cultivation on which we perhaps rightly pride ourselves in this country, are being followed and improved, as local conditions dictate, on the other side of the Atlantic. The questions of agriculture are often more scientifically handled than is the case with us, except, of course, where they are being dealt with in research establishments. The ratio of three acres and a cow is becoming reversed, and with intensive Grass and Clover cultivation the more skilful of our American cousins are said to manage to keep three cows to an acre. Of course, on land of exceptional fertility this is sometimes rendered possible in England even on the meadow and permanent pasture, which owes its great value largely to the climatic conditions that prevail in these islands. But there is no doubt that, with the adoption of more scientific practice, the feeding value of pasture is susceptible, in most places at any rate, of considerable improvement. The chief difficulty to encounter lies in the natural prejudice against novelty, and in the cost and risk that experiments necessarily entail, and these are aspects of the matter which are apt to appear especially unattractive during periods of agricultural depression. The subject-matter of the book, though of indirect interest to horticulturists, is worthy of consideration by them, inasmuch as many suggestive sidelights are thrown on the mutual relations that subsist between soil-condition and crops. The soil is

* By G. B. Voorhees, Director of the New Jersey Experiment Stations, &c. The Macmillan Co., New York, 1907.

not merely mechanical mixture of chemical compounds, but it is capable of immense modification by the indirect action of the micro-organisms which inhabit it, and to the influence of which its fertility, at least in a great measure, is to be attributed.

A NEW USE FOR MOLASSES.—Under this heading, the *Queensland Agricultural Journal* prints the following from the *Bundaberg Mail*. "It is surprising," the writer says, "how few people are acquainted with the real nature and properties of Molasses. Even men who have worked in sugar mills and distilleries for years often betray ignorance in this respect. The writer had occasion some time ago to scientifically investigate the properties of Molasses, and found it a very difficult problem to burn off a large quantity of surplus Molasses without the aid of specially constructed furnaces. Molasses is not the highly inflammable mixture that people imagine it to be. It would be practically impossible to set a tank of Molasses on fire by any means whatever. Even a mixture of Molasses and methylated spirits or sulphur will burn very imperfectly at first, and finally smoulder and die out. A charge of Molasses will extinguish or damp down the strongest furnace fire in a few minutes. A jet of Molasses played on burning wood will instantly extinguish the fire, and the wood cannot be again fired until the Molasses is removed from the surface. For extinguishing large tanks of burning oil, kerosine, or spirit, there is nothing more effective than bags or tarpaulins steeped in Molasses, and when such tanks are in danger of being fired, they should be covered over and made airtight with tarpaulins that have previously been immersed in heavy Molasses."

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

COUNT TCHIHATCHEF (see p. 325).—The belief being very general that Count Paul de Tchihatchef was a Russian nobleman, allow me to say that this distinguished geographer and botanist was not a Russian, but an Italian, Count. R. L.

SPORTING OF CHRYSANTHEMUMS.—Some plants of the single yellow variety Winnie Sherring have been grown here for several years in the ordinary manner as bush plants, without disbudding. No change of stock has taken place, neither until this year has any sport occurred. This year the first bloom that opened was a good double-reflexed flower: some of the later flowers are semi-double, one is single as at first, and there are several intermediate stages. W. H. Divers, *Belvoir Castle Gardens, Grantham*.

NERINE BOWDENII (see fig 164 in *Gard. Chron* November 26, 1904).—This handsome species was recently in flower here, and it presented a charming sight; the colour being delightful. The bulbs were purchased on their arrival from the Cape just 12 months ago. They were potted forthwith in good fibrous loam, with the addition of a liberal amount of sand and charcoal, and placed in a cold frame. Everything was done to give them as much light and air as the atmospheric conditions would permit. As soon as any signs of growth were seen a little water was afforded, increasing the amount as the leaves increased in number and size. In May the leaves showed signs of fading away, and the supply of water was gradually decreased and eventually discontinued. During the late summer they were fully exposed to the sun and kept dry, and in the last week in August the flower-scape began to appear. I do not think that this plant will multiply very fast, for the offshoots are but very small, and they will probably take two or three years before they attain to a flowering size. Two or three bulbs which were kept warm during their growing season have not grown so well as the others. I propose trying some in a sunny border out-of-doors, keeping them protected from frost. H. W. Trevince.

CULTURE OF COCKSCOMB (CELOSIA CRISTATA).—I have grown my plants for several years under the following treatment, and they have succeeded well, notwithstanding that the degree of heat employed is so much less than is usually recommended. I generally sow the seed in a well-drained seed pan containing light, sandy soil, the first week in March, placing the seed pan on a shelf near the glass in a moist atmosphere having a temperature of 60°. In cultivating them at this temperature great care must be taken when watering the seedlings, as the plants when in the seedling stage have a tendency to damp off when they are about 1 inch in height. When large enough to be handled, they can be potted into thumb-pots, using a richer soil. Avoid potting any washy-looking seedlings, choosing the most healthy plants. As growth increases the plants can be repotted, each time into pots one size larger than they were in previously, still keeping them near to the glass. When the flower-heads show, the plants should then be put into the pots in which they will flower. I use 5-inch pots for this final shift. When potting this time, add to the compost one-third well-rotted manure. The plants should then be removed to a drier part of the house where they will be free from the drip from shelves, &c. When the pots have become full of roots, apply just enough water to the roots to prevent the leaves flagging. There are very few greenhouse annuals which attract the attention of visitors more than a well-cultivated



SIR FRANK CRISP

(who has received the honour of Knighthood, as was announced in our last issue).

Cockscomb. Even if they pass all the other plants in the house with but a casual glance, they are sure to stop and have a look at the Cockscomb, whose peculiar form and beautiful colour cannot be passed unnoticed. *Thos. Francis, The Gardens, Rockwood House, Bolton-le-Moors, Lancs.*

LATE PEAS.—We gathered a dish of Peas on November 16, from plants in the open garden. The variety was Gladstone. G. F. Thomas, *Bentham Hall, Broseley, Shropshire*.

TRENCHING GROUND.—One very important factor in plants producing a strong growth when planted on trenched soil is the encouragement the roots have to plunge deeply, and thus in hot weather to be enabled to withstand drought. Trenching is of more value for summer crops than for winter ones, and this especially applies to vegetables. Whilst deep working of the soil helps to keep summer crops in almost luxuriant growth, in winter the common growing crops are often too luxuriant on the same land, but that trouble may be obviated by sowing or planting rather later than usual, also in having the ground made very firm. But with trenching—and it matters little whether the deeper system or the half-trenching, commonly called bastard trenching, be adopted—a primary aim of the cultivator should be to put a manure-dressing, whilst the trenching is proceeding, down beneath the top spit of soil. Such manure will serve the double purposes of enticing the roots to grow

deeply, and thus be out of the hot, scorched surface soil, and also help to fertilise or improve the subsoil, and with the aid of the root action of the crops and the admission of air, tend soon to make this lower layer as fertile as is the surface soil. Very commonly in large gardens deep or complete trenching is practised, because this manuring of the subsoil has enabled it to be brought to the top, and therefore the whole body of soil from 2 feet to 3 feet in depth is in good cultural condition. Where the subsoil is stiff and inert it is a good practise to open a wide trench, 3 feet deep, and to bury in that trench, as fast as obtained, all garden refuse, then to cast on that the soil of similar depth from the next trench. In course of time the whole will become fertilised through the addition of this decaying vegetable matter. D.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

NOVEMBER 12.—*Present*: Mr. J. T. Bennett-Pöe, M.A. (in the chair), and Dr. A. B. Rendle, Prof. Boulger, Messrs. W. C. Worsdell, G. Saunders, H. J. Elwes, A. W. Sutton, C. T. Druery, A. E. Bowles, and F. J. Chittenden (hon. secretary).

Malformed Orchids.—Mr. W. C. WORSDELL said that the flowers shown at the last meeting showed only two sepals and two petals, the lip being entirely absent; he also showed specimens of *Cattleya Loddigesii* (?) with double lips, and a *Cypripedium* with the same malformation. The last two specimens came from GURNEY WILSON, Esq., Glenthorne, Haywards Heath.

"Low Country" Tea Root Disease of Ceylon.—Dr. C. B. PLOWRIGHT sent specimens illustrating this disease, which Mr. T. PETCH attributes to an undescribed species of *Ustilina*. "The fructification occurs in two forms, conidial and ascleigerous. The former consists of flattened, rounded, disc-like growths upon the lower part of the stems, which are covered with a copious growth of greyish conidia. The ascospores follow in due course upon these plate-like growths, and can easily be recognised by their minute black concentric openings. The mycelium is white or yellowish, but becomes black when it comes to the surface in a crack in the bark of the root and forms irregular black lines in the wood." The specimen sent showed the disease in its typical state. There was also a specimen of an unusually well-developed asclephore. "This disease resembles very closely in many ways *Ustilina vulgaris*, Tul., which grows in our own country, and this, in the light of Mr. PETCH's specimen is doubtless also a pyrenomycetous parasite upon Beech trees." Specimens both in the conidial and ascleigerous conditions, gathered this autumn near Narford Hall, King's Lynn, accompanied the notes. "It has hitherto been regarded as a saprophyte, but we must now regard it rather as a parasite on this tree." Mr. PETCH says of this disease: "In low-country districts nearly all root disease in Tea appears to be caused by this species of *Ustilina*. The indications on the dying root are not so clear as those of *Poria* or *Roselinia*, but there is no difficulty in finding them once they have been pointed out. The roots show small black nodules or warts, which probably give rise to underground mycelium, though this has not been clearly established. The mycelium between the wood and the bark spreads in white or yellowish fan-shaped patches, which acquire a black edge when they meet a crack in the bark. Irregular black lines are seen in a cross-section of the root. The fructification appears on the lower part of the stem, emerging through a crack in the bark in the form of a white swollen cushion. This spreads over the surface as a more or less flattened white plate, which finally becomes grey and concentrically zoned. When quite ripe, it is a grey, concentrically-zoned plate marked with minute black dots; it lies close to the surface of the stem, but is only attached at one point. The under surface is black, and the whole surface hard and brittle. Two kinds of spores are produced: the first are borne on the outer surface, when the fungus is wholly white; the second are produced when the fungus is ripe, in minute chambers, whose

openings are the black points previously mentioned. On Tea bushes in the field the fructification often takes a different shape, springing from a very thin base to a height of about half an inch and widening out to a flat, circular top. In one instance this disease began on *Grevillea stumps*, and spread to the adjoining Tea by contact."

Hybrid Pear and Quince.—Mr. WORSLEY wrote that he had examined two of the fruits of the hybrid between Bergamotte Esperen and the Portuguese Quince; in the small fruits he had found no perfect seeds, but merely husks. "The skin was smoother than in the female parent, and not so notably spotted with dark brown spots. The colour of the flesh was greenish, and both in this and in the amount of grit it resembled the female parent. The time of ripening was synchronous with that of the Quince, and more than three months earlier than that of the Bergamotte Esperen. The flesh was sweet and exceedingly aromatic, in both of which respects it excelled the female parent and in the former the male. I could discern no trace of either the acidity, roughness, or special flavour of the Quince. . . . The quality of this hybrid entitles it to be placed in the highest rank of dessert fruits if sizeable fruits can be obtained after grafting. It is interesting to note that the Pear I have under the name of 'Conseiller de la Cour' is ripe at the end of October, that the fruits vary greatly in size and shape, that fertile seeds are rarely if ever borne, that the flesh is yellow and in flavour very close to Mr. Veitch's example. It is at least possible that these characters attach to Pears crossed with Quince pollen."

Wheat-ear Carnation, &c.—From Messrs. J. PEED & SON, of Streatham, came specimens of the Wheat-ear Carnation, and of fasciated and contorted stems of Broom.

THE HORTICULTURAL CLUB.

"GARDENS OF ROSES."

On the 12th inst., at the Hotel Windsor, Mr. George Gordon, V.M.H., gave an interesting lecture on "Gardens of Roses," illustrating it by a large number of photographic slides from photographs taken mainly by himself. Mr. Geo. Monro, V.M.H., presided. Mr. Gordon showed how wonderfully the Rose in its innumerable forms lends itself to varied treatment and to varied conditions; while here and there among the pictorial slides were interpolated written lists of the varieties best adapted for the types of culture shown. Standard Roses, as grown in Kew Gardens, were displayed, and emphasis was laid upon the necessity of the grafts being effected upon young stocks and not upon old and bark-bound ones. As a relief to the somewhat stiff and artificial appearance of standards when grown by themselves, several slides were shown in which they were picturesquely associated with dwarf Roses. A series of pergolas were shown in conjunction with arches, over which some magnificent specimens of the rambling types of Roses displayed themselves to the utmost advantage; the finest effect being invariably obtained when natural growth was permitted and pruning confined to the elimination of old, weakly, and useless wood. Some grand specimens of Pillar Roses were shown, several modes of obtaining fine effects in this direction by simple means being exhibited. Roses on walls were also touched upon, and the disadvantages of one-sided illumination and risk of drought induced by such positions were pointed out as being the cause of many failures.

The Rev. J. H. Pemberton pointed out that the word "climbing" in connection with Roses was entirely misplaced, as none had really a climbing habit proper, but merely spread and intermingled with other plants by virtue of redundant growth, and the more this was encouraged the better the display of bloom. One drawback to most of the brilliant rambling tribe was that they only bloomed for a comparatively short period, and it should consequently be the aim of the Rosarian to obtain perpetual bloomers such as we so happily possess in other sections. Another point was the necessity for maintaining the perfume so characteristic of the Rose, the finest form of flower falling far short of perfection if odourless. Sir Albert Rollit referred to a visit he had made to the Danubian Rose-growing

districts of Bulgaria, where thousands of acres were devoted to Rose culture and the renowned attar of Roses was produced. He passed round a tiny bottle of this scent, wherein the perfume of a myriad Roses was concentrated into a few costly drops.

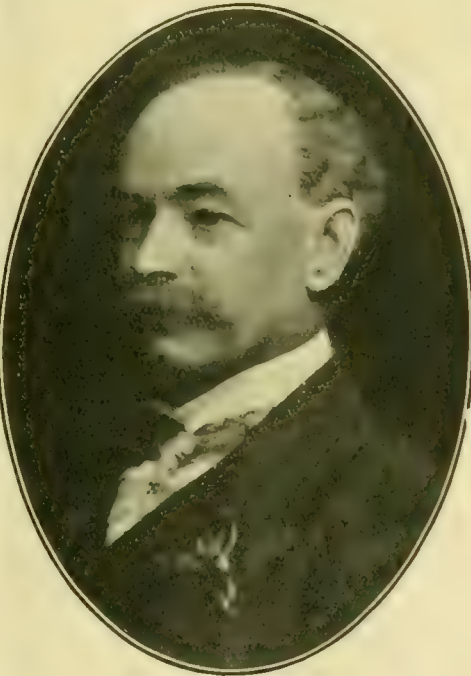
COLCHESTER AUTUMN SHOW.

NOVEMBER 8.—This exhibition was held at the Corn Exchange, Colchester, on this date. Fruit of splendid quality was staged, there being no fewer than 30 classes devoted to hardy fruits, in addition to others in which special prizes were offered. Vegetables were also freely displayed, but the exhibits of Chrysanthemums were not so numerous as in some former years, although the quality of the flowers was good, especially in the larger classes. The premier award for Chrysanthemums was won by Miss WILLMOTT, Warley Place, Brentwood (gr. Mr. Preece), for an exhibit of blooms of Japanese varieties.

Other successful exhibitors of Chrysanthemums were W. E. EYRES, Esq., Colchester (gr. Mr. Doidge), and Messrs. G. W. FINCHAM and BEARD, Colchester.

The best Chrysanthemum bloom in the show, and for which a Silver Medal was offered, was Miss WILLMOTT's flower of Buttercup.

Plants and groups.—Exhibits of these were not numerous. Mr. W. DIAPER, Priory Street,



SIR JEREMIAH COLMAN, BART
(who has received the honour of Baronetcy, as was announced in our last issue).

Colchester, received the premier award for a creditable exhibit; 2nd, Mr. J. CLAYDON, Holmwood Lexden. Messrs. DIAPER and CLAYDON were also awarded the 1st and 2nd prizes in the same order for a group of plants, and the first-named exhibitor won the 1st prize in all the classes for Pompon, Reflexed, and Incurved varieties.

Fruit.—There was a splendid competition in the fruit classes. Some remarkably fine Grapes were staged. S. F. HURNARD, Esq., Hill Street, Lexden, had the best black Grapes in Black Alicante.

A. T. OSBORNE, Esq., Colchester, had the best bunches of Muscat of Alexandria.

The best six dishes of dessert Apples came from the Hollesley Bay Colony, Miss COURTALD, Colne-Engaine, being 2nd.

The 1st prize for a collection of cooking Apples was won by the Hon. W. LOWTHER, with grand specimens; 2nd, Miss COURTALD.

The best collection of Pears came from the gardens of Miss COURTALD, the Rev. R. W. CHILTON being a close 2nd.

Vegetable.—Exhibits of vegetables occupied much space. The 1st prize in the class for the largest collections was taken by the Hon. W.

LOWTHER, Campsea Ashe, Wickham Market (gr. Mr. Andrews), with splendid produce; 2nd, Mrs. E. DEACON.

In the class for a smaller collection, Mrs. DEACON won the 1st prize.

Non-competitive exhibits.—Messrs. DOBBIE & Co., Mark's Tey and Rothsay, exhibited a splendid collection of Onions; Mr. E. ABBOTT, Ardleigh, Essex, showed a collection of Apples and Pears; Mr. SEABROOK, Chelmsford, displayed a large number of hardy fruits, and some beautiful Violets were exhibited by Mr. FRANCIS, West Bergholt.

DERBY CHRYSANTHEMUM.

NOVEMBER 15, 16.—The 23rd annual exhibition was held at the Drill Hall, Derby, on these dates, and, although the hall is a spacious one, sufficient space to accommodate the whole of the exhibits was only found with difficulty. Although in the past few years a falling off has been noticed in the exhibits, the society this year has enjoyed a state of prosperity.

Trade exhibits added much to the attractiveness of the show. Messrs. LAXTON BROS., Bedford, were awarded a Gold Medal for a collection of Apples arranged with *Nephrolepis* todeoides and *N. Whitmanii*.

Messrs. CLIBRANS, of Altrincham, put up an excellent miscellaneous group of flowering and foliage plants, including single Chrysanthemums. (Gold Medal.)

Mr. GODFREY, of Exmouth, staged a bank of Chrysanthemums of recent introduction, tastefully arranged and relieved with foliage plants. (Gold Medal.)

A display of Cyclamen was seen from the gardens of the Rev. H. BUCKSTON, of Sutton Hall, Derby (gr. Mr. A. Sharnbrook). (Gold Medal.)

The variety *F. S. Vallis* shown by Mr. J. VOSS (gr. to Lord SCARSDALE) was the premier bloom in the show.

In the competitive classes, an important one was that for 24 blooms, distinct, of Japanese varieties. The 1st prize was awarded to Mr. JOSIAH WOOD, Alveston; 2nd to Miss WILLMOTT, Chaddesden Hall (gr. Mr. J. Evans).

In the smaller class for 18 blooms of Japanese varieties, Mr. J. BREWER, Mickleover, was placed 1st, followed by Mrs. W. POWER. Mrs. POWER had also the best group of Chrysanthemum plants arranged for effect.

The best exhibit of 18 blooms of Incurved varieties was shown by Mrs. W. POWER, The Pastures, Derby (gr. Mr. A. Simeson); 2nd, Mr. JOSIAH WOOD.

Mr. WOOD was to the fore for 18 blooms of Japanese Chrysanthemums staged in six vases; 2nd, Mr. A. SIMESON.

The classes devoted to fruit and vegetables were well represented.

On the second day of the show, several thousand school children were admitted free. Prizes were offered to the children for the best essay on "A Visit to the Chrysanthemum Show."

NATIONAL CHRYSANTHEMUM.

NOVEMBER 17.—At the meeting of the Floral Committee held on this date First-Class Certificates were awarded to the following varieties:—

Mrs. J. Hygate (Incurved).—This is one of the largest of the white Incurved Chrysanthemums. Shown by Mr. NORMAN DAVIS, Framfield, Sussex.

Marquis of Northampton.—A bronzy-pink sport from W. A. Etherington, shown by Mr. A. R. SEAL, Castle Ashby Gardens, Northampton.

Bessie Evans.—A large Japanese variety; white, shaded with pink, and having long, drooping florets. Shown by Mr. W. J. GODFREY, Exmouth.

Mab Ellis.—A decorative variety of medium size; colour golden yellow. Shown by Messrs. WELLS & Co.

Henry Prior, a yellow, Incurved, Japanese variety of medium size, from Mr. J. TAYLOR, Forest Gate, was commended, as was also the variety Foxhunter (see p. 346 ante), shown by Messrs. W. WELLS & Co., Merstham.

NATIONAL HORTICULTURAL OF FRANCE.

NOVEMBER 8.—The great autumn exhibition of the National Horticultural Society of France was opened on this date in the immense greenhouses situated in the Cours la Reine, Paris. There was a grand display of Chrysanthemums, fruit, fruit trees, vegetables, trees, shrubs, and flowering subjects, such as Carnations, Dahlias, Begonias, Primulas, Cyclamen, &c. On the opening morning M. Fallières, President of the French Republic, visited the show.

The weather was superb, and visitors attended in large numbers. The promenade leading up to the show was, as usual, supplied with many choice groups of hardy shrubs, Conifers, &c., by exhibitors, such as MM. Brochet, Lecoq, Moser et fils, and others. Garden pottery, statuary, greenhouses, trained fruit trees, and many exhibits connected with horticultural arts and in-

Grand prix d'honneur. Most of the varieties were unfamiliar to us, but among the best may be recorded W. Tricker, Miss Roosevelt, Boule de Feu, Presdt. Nonin, C. Schwartz, Mme. Ed. Roger, and A. Naumené. Facing the entrance to the building was a big group of Chrysanthemums exhibited by M. G. MAGNE, in which there were some large flowers, two or three on a plant, of F. S. Vallis, Mme. Ed. Roger, Duchesse d'Orléans, Luzerta, Souvenir de Cologne, &c. M. NONIN staged a grand exhibit, for which he received a work of art. His plants were arranged in an immense square, with an inside path and a rectangular middle bed. Some of his best varieties were Ami Nonin, Ch. Bacqué, Sapho, W. Duckham, Naples, W. R. Church, Roi d'Italie, Gloire de Vanves, and Petit André. This exhibitor had also some large-flowered early varieties that received First-Class Certificates, of which mention may be made of Plume de Coq, L'Africaine (a grand crimson

seen. The variety chosen was F. S. Vallis, and the flowers were of the greatest dimensions, in all, some 300 blooms of this one variety, mingled with bronzy autumn foliage. At intervals there were placed large vases of other varieties, including Mrs. Barkley, W. R. Church, &c., while at the corners were four large glass vases containing Roses.

The firm of MM. DUBUISSON-FOUBERT, two young brothers, whose successful culture of Chrysanthemums was exemplified last year in their flowers of F. S. Vallis, which were the largest in the show, again distinguished themselves. On the present occasion their group consisted of a series of massive flowers in vases, with a large central display of the variety F. S. Vallis, in enormous examples. The other flowers were arranged in separate colours by themselves. Small vases were placed at intervals with good effect, and autumn foliage was freely used. A special prize was awarded to



FIG. 150.—M. CALVAT'S NEW SEEDLINGS AT THE PARIS CHRYSANTHEMUM SHOW.

(Among the judges may be noticed M. Philippe de Vilmorin and, on either side of him, Messrs. C. Harman Payne and Geo. Schneider.)

dustries were freely shown in this part of the exhibition grounds.

On entering the first large greenhouse, to the right and left were two grand exhibits in the art of floral decoration. One by M. E. DEBRIE consisted of a dinner table decoration, with long sprays of Orchids and a corner decorative group of mauve-coloured Chrysanthemums effectively arranged with mauve silk and plush. The other was a terrace balustrade, with a small grass lawn, gravel paths, and flower beds. Here, again, Orchids most artistically arranged and of various species formed the chief objects. Behind these were the two rooms in which the Orchid classes were staged. MM. REGNIER, MARON, BERANEK, LE SUEUR, and the ÉCOLE HORTICOLE DU PLESSIS put up some beautiful groups of Orchids, while Messrs. TRUFFAUT set up ornamental foliage plants in exquisite style.

Chrysanthemums were shown in immense numbers. M. CAVRON, as usual, showed grafted plants in large pots, and was awarded the

flower), Leodie, Comtesse Francois Clary, Mme. Camille Maheut, and Mme. Abel Chatenay. Messrs. LEVEQUE ET FILS, G. AVARRE, and many others also showed big groups.

In the corridor connecting the two large greenhouses Messrs. VILMORIN, ANDRIEU & Co. staged a very large exhibit. This consisted of grand specimen trained plants in the greatest possible variety. They were arranged in a series of geometrical beds of various shapes, and in the middle of the whole was a wonderful plant of Tokio, a pale pink-coloured Japanese variety, grown as a standard, with a semi-circular head. The plant was carrying 738 blooms. Some of the other standard plants carried 100 blooms each. The varieties were far too numerous for us to mention.

Another grand exhibit came from M. G. TRUFFAUT. He, too, arranged his flowers on a grass lawn. In the middle of the group was a huge monument of Chrysanthemum blooms, the most imposing thing of its kind we have ever

this firm for the biggest bloom in the show, the variety being F. S. Vallis.

Other exhibitors in the classes for Chrysanthemums were very numerous, and their displays contained many fine exhibition flowers. Many of the varieties shown are unknown in England. General Hutton, Pres. Viger, Mme. Paolo Radaelli, Marquis Visconti-Venosta, M. Loiseau-Rousseau, Le Bouvier, Reg. Vallis, J. H. Silsbury, Sapho, Rayonnant, Lt.-Col. Ducroiset, Australia, Mr. T. Carrington, and Souvenir de Bailleul were among the most frequently and finely shown.

Dahlias, Begonias, Cyclamen, Carnations, and Hydrangeas were also well shown.

New seedling Chrysanthemums were staged by M. E. CALVAT (who had a fine collection), the Marquis de PINS, and M. CHANTRIÉ.

Fruit trees, trained in every conceivable form, were shown along the promenade. Apples and Pears were sent by many exhibitors in great

quantity. Good bunches of Grapes were shown by MM. SALOMON ET FILS, and by Messrs. CORDONNIER ET FILS. The latter firm also staged a noble exhibit of cut blooms of Chrysanthemums. A grand exhibit of vegetables was arranged by the well-known firm of MM. VALMORIN, ANDRIEUX & Co. The group was 41 yards long, and was placed at the foot of the staircase leading from the corridor to the Seine. Every kind of vegetable in season was included in this display, which was arranged with great taste.

LINNEAN SOCIETY.

NOVEMBER 7. A meeting was held on the above date, Prof. W. A. Herdman, F.R.S., President, in the chair.

The General Secretary exhibited a copy of the second edition of Hudson's *Flora Anglica*, 1778, on behalf of Mr. ALEXANDER H. STEVENSON, of Dundee, who had picked up the volume in a dilapidated state on a bookstall. It contains numerous notes by Rev. William Kirby, an early Fellow of the Society, who spent his entire clerical life of 68 years in the parish of Batham, a few miles from Ipswich in the direction of Saxmundham. Many of these notes relate to localities in the neighbourhood, recorded in 1797, judging from the few which are dated.

Dr. A. B. RENDLE exhibited an abnormal specimen of *Eucalyptus salmonophloea*, F. Muell., from West Australia, having two stems horizontally connected by new growth. The Rev. J. GERARD, S.J., who referred to similar cases in the Yew (*Taxus baccata*), and the Rev. G. HENSLOW commented on this exhibition.

The first paper of the evening was by the Rev. G. HENSLOW, "On the Origin of the Distinctive Floral Whorls of certain Dicotyledons."

Mr. A. D. MICHAEL, F.L.S., gave the abstract of a paper upon eight very remarkable new species of Acari from New Zealand, from the collection of the late E. Bostock—six Oribatidæ and two Gamasidæ; the author considered them to be probably the most striking species of the respective families ever exhibited. They are to be called Oribata Bostockii, distinguished by the pteromorphæ being attached to the anterior margin of the abdomen instead of its lateral margin; *Notaspis spinulosa*, carrying spinulated hairs of extraordinary size; *Notaspis caudata*, with a posterior projection not hitherto found in the genus; *Hermannia phyllophora*, with great leaf-like processes on the legs; *Nothrus copiniarius* and *N. unguifera*, extreme exaggerations of that section of the genus represented in Europe by *N. spiniger*; *Trachynotus sclerophyllus*, in which the great leaf-like transparent hairs found on many Acari have become opaque, hard, brown chitin; and *T. fimbriatus*, with singular flattened borders to the first pair of legs, much broader than the legs themselves. A series of lantern-slides from the author's drawings were shown in connection with the explanations given.

NEWPORT (MON.) CHRYSANTHEMUM.

NOVEMBER 7. This Society held its 19th annual show in the Gymnasium, Newport, on this date, the exhibition being a success. The classes, which numbered 43, were generally well filled with exhibits of a high degree of merit.

Cut blooms.—In the class for 24 Japanese blooms in not fewer than 18 varieties, Mr. DUFF (gr. to Mrs. F. S. WILLIAMS, Brynglas, Newport) led amongst four exhibitors with choice examples of Valerie Greenham, F. S. Vallis, Mme. Paola Radaelli, Mrs. F. W. Vallis, Duchess of Sutherland, W. H. Church, Mrs. Knox, M. C. H. Boosey, President Viger, &c. Mr. Duff having now won the 1st prize in this class for the third time, he becomes the possessor of the "Fred Phillips" Challenge Bowl. Mr. H. PITT, Abergavenny, won the 2nd prize with an almost equally good set of blooms.

Five excellent exhibits were staged in the class for twelve Japanese blooms distinct, the 1st position being taken by Mr. DRAKE, Cardiff, with excellent blooms of Walter Jinks, Valerie Greenham, Mrs. Barkley, President Viger, W. A. Etherington, &c. 2nd, Messrs. GEO. WILLIAMS & SONS, Cardiff.

Incurved varieties.—Only two exhibitors contested in the class for six incurved blooms, and of these Mr. DRAKE was successful with blooms of Godfrey's Eclipse, Mrs. Denyer, &c. A

class open to gentlemen's gardeners and amateurs only was provided for 12 Japanese blooms. Mr. DUFF was again successful with good blooms of leading varieties.

In the amateurs' classes, Mr. W. H. HOLLINGDALE was a remarkably successful exhibitor. He was placed 1st for twelve Japanese blooms, thus winning the "James Clements" Challenge Bowl; 1st for six Japanese blooms; for six Japanese blooms arranged with foliage, and for three Japanese blooms of an incurved type.

Blooms in vases. The principal class was one for eight vases of distinct varieties, three blooms in each vase. In this competition, Mr. DRAKE staged some of the best blooms in the show, and won the 1st prize easily. His flowers were large, fresh, and well coloured. He showed J. H. Salisbury (one of these blooms secured the prize offered for the best bloom in the show), Reginald Vallis, Valerie Greenham, Mrs. Barkley, F. S. Vallis, M. P. Radaelli, Walter Jinks, and W. A. Etherington. Mr. DUFF was a close 2nd. The 1st prize in this class included the Society's Challenge Vase, valued at 25 guineas.

Mr. HOLLINGDALE was 1st for three vases of a Japanese variety in a class open to amateurs only. The 1st prize included the "William Jessemann" Challenge Cup.

Single varieties made a pretty show. Mr. R. FRY won leading honours for six vases of these flowers, Mr. LONG gaining the 2nd prize.

Grapes. A class was provided for a group of Chrysanthemums arranged with ornamental-leaved plants in a space occupying 50 square feet. The 1st prize was won by Messrs. WILLIAMS & SONS, Cardiff. 2nd, Mr. Wiggins (gr. to R. T. MANN, Esq.). In the smaller class for a group occupying an area of 40 ft., Mr. LONG was 1st. The best group of miscellaneous plants was shown by Mr. POWELL (gr. to Col. WALLACE CHESTERHOLME, Newport).

BRADFORD AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 15, 16.—The 21st exhibition of this society, held on the foregoing dates, was again a success. There were upwards of 240 entries in 46 classes, and the prize money amounted to about £150, in addition to a silver cup given by the Lord Mayor, gold and silver medals, and various prizes in kind. The premier award in the open classes for cut blooms was again won by ARTHUR JAMES, Esq., Rugby (gr. Mr. A. Chandler), who has headed the list for many years. Amongst the winning varieties were F. S. Vallis, Reg. Vallis, Bessie Godfrey, Marquis Venosta, General Hutton, Mme. P. Radaelli, Duchess of Sutherland, &c. The 2nd prize in this class fell to E. G. MOCATTA, Esq., Addleston (gr. Mr. Thomas Stevenson), whose group comprised Lady Talbot, Mrs. D. Fairweather, Mrs. J. Dunn, Reginald Vallis, Valerie Greenham, Leigh Park Wonder, &c. This group was only a little inferior in quality to that staged by the 1st prize-winner. Mr. STEVENSON secured the National Chrysanthemum Society's Certificate of Merit for the best Japanese bloom in the show. In the other classes for Japanese blooms, the principal prize-winners were Messrs. CHANDLER, STEVENSON, and E. ELLIS, Heswall, Cheshire. The best incurved blooms were shown by Mr. ELLIS, Mr. G. W. DRAKE, Cardiff, winning the 2nd award. For 12 dissimilar blooms of incurved varieties Mr. ELLIS was 1st, followed by Mr. DRAKE. Mr. CHANDLER, in addition to securing three 1st and two 3rd prizes for Chrysanthemums, was also awarded the 1st prizes for Grapes, both black and white.

In the local classes Mr. JOHN THORNTON, of Drighlington, showed an exceedingly meritorious exhibit of 18 Japanese blooms, which won for him the Lord Mayor's Cup. His collection embraced the following varieties: F. S. Vallis, Mrs. Knox, Mrs. Miller, Leigh Park Wonder, Mme. M. de Mons, Algernon Davis, Miss E. Fulton, &c. Messrs. H. CLARK & SONS, Leeds, proved close competitors.

Alderman J. A. GODWIN (gr. Mr. A. Attenborough) was the 1st prize-winner in the section for six yellow Japanese blooms.

The stall provided by the society for the benefit of the Royal Gardeners' Orphan Fund was again a success, with the result that a cheque for £6 will be sent to the secretary of this charity. The committee has, during the past five or six years, sent upwards of £50 to the R.G.O.F. by this means.

DEVON & EXETER HORTICULTURAL.

NOVEMBER 12, 13.—The 205th exhibition of this society was held in the Victoria Hall, Exeter, on these dates, the exhibits embracing Chrysanthemums, fruit and vegetables. Chrysanthemum blooms were, as a rule, not up to the standard of those of past years, but fruit was especially good, considering the season. Vegetables were well shown, particularly those in the classes for special prize collections. The entries numbered over 600.

A feature of the exhibition was a lecture on "Fruit Culture," given by Mr. S. Wright, Superintendent of the Royal Horticultural Society's Gardens at Wisley.

Chrysanthemum. In the open class for 30 blooms of Japanese varieties in 10 distinct sets, and staged in vases with foliage, a special prize was offered by the President, J. H. LAY, Esq., W. BROCK, Esq., Parkerswell (gr. W. Rowland), was awarded the 1st prize, his best examples being blooms of Mrs. A. T. Miller, Reginald Vallis, Valerie Greenham, and Bessie Godfrey. A bloom of the last-named variety was awarded the prize offered for the best bloom in the show. The 2nd prize was awarded to a very fine exhibit shown by Rev. T. SHEEPSHANKS, who had good specimens of Mrs. A. H. Lee and Valerie Greenham, and grandly coloured blooms of Reginald Vallis and Mrs. G. Mickleham. Mr. C. M. COLLINGWOOD, who won the 3rd prize, was awarded the N.C.S. Certificate for the best cut blooms showed by an amateur.

The 1st prize for a collection of cut blooms, embracing the different sections of Chrysanthemums, was won by Mr. C. M. COLLINGWOOD with an exceedingly interesting and meritorious display. 2nd, Mr. W. BROCK.

In the classes for 24 Japanese blooms in not fewer than 16 distinct varieties; for 12 blooms of Japanese Chrysanthemums; and for six blooms, the Rev. T. SHEEPSHANKS, Chudleigh, won the 1st prizes.

Mr. SHEEPSHANKS (gr. A. Duckley), was also awarded the medal for the best professional exhibit in the show, and the 1st prize for 12 blooms of Japanese incurved varieties.

The 1st prize for 12 vases of single Chrysanthemums, three sprays in each vase, was awarded Mr. T. KEKEWICH, Peamore (gr. J. Abrams), Mr. H. TOWNSEND, Exeter (gr. H. Phillips), being placed 2nd.

FRUIT.

The best three bunches of Black Alicante Grapes were shown by Sir DUDLEY DUCKWORTH KING (gr. Mr. Sidney Baker).

No prize was awarded in the class for Muscat of Alexandria, but for three bunches of any other variety Sir DUDLEY KING won the 1st prize with very fine fruits of Gros Colmar.

Apples. A class was provided for a collection of 24 varieties of Apples, to include 12 culinary and 12 dessert sorts. Mr. B. H. HILL, Crediton (gr. G. Lock), was 1st with an excellent exhibit.

In the class for six varieties of dessert Apples, Sir DUDLEY DUCKWORTH KING was placed 1st, and Mr. B. H. HILL 2nd.

Pears.—The best collection of nine varieties of Pears in six dessert and three culinary kinds, was also shown by Mr. B. H. HILL, who had fine fruits of Pitmaston Duchess, Beurré Clair, Durondeau, Beurré Diel, Marie Benoist,

Sir J. W. FERGUSON DAVIE, Creedy Park (gr. W. Seward), was 1st for three dessert varieties; and Dr. SAMWAYS, Knowle (gr. A. C. Williams), 1st for the three culinary varieties of Pears.

VEGETABLES.

An important class was for a collection of eight distinct kinds of vegetables. The 1st prize was awarded to Mr. B. H. HILL, 2nd, Mr. J. H. LAY.

The classes in which prizes were offered by Messrs. Robert Veitch & Son, Sutton, James Carter & Co., and Jarman & Co., were keenly contested, and in the exhibits were included some of the finest vegetables in the show.

TRADE EXHIBITS.

Messrs. ROBERT VEITCH & SON, Exeter, staged an extensive collection of ornamental foliaged and berried shrubs and Conifers, single Chrysanthemums, and a collection of Apples.

Messrs. JARMAN & Co., Chard, showed a miscellaneous exhibit of fruit and vegetables.

The BRITISH COLUMBIAN GOVERNMENT staged an excellent display of Apples. A. H.

SCOTTISH HORTICULTURAL.

NOVEMBER 14, 15, 16.—The unfavourable weather during October seriously affected Chrysanthemums in Scotland, with the result that some blank spaces were seen on the exhibition tables. At this show vases alone were used for displaying the flowers, each receptacle containing three blooms. The chief prize is the Queen Victoria Memorial Cup, with £10 in money; this is offered for 15 vases of distinct varieties. Five competitors staged, the blooms as a whole being below the usual high standard of this show. Mr. NICOLL, Rossie, Forgardenny, who won the cup two years ago, was placed 1st with 128 points out of a possible 180; Mrs. A. T. Miller, Mrs. F. W. Vallis, Lady Conyers, and J. H. Silsbury were Mr. NICOLL's finest examples. Mr. BEISANT, Castle Huntly, was awarded the 2nd prize. 3rd, Mr. G. STEWART, Tulliallan.

In the class in which the Scottish Challenge Cup was offered, the 1st prize collection embraced much the finest blooms in the show; they came from the gardens of D. J. YOUNGER, Esq., Arnsbrae, Alloa (gr. Mr. T. Baird). The schedule required eight vases containing blooms of distinct varieties. Mr. Baird secured 76½ points out of a possible 96, and a medal was awarded for the blooms of the variety Mrs. A. T. Miller. 2nd, Mr. HUTTON, Usan House, Montrose. 3rd, Mr. R. MCKENZIE, Dochfour, Beally.

In the class for six vases of Chrysanthemums in six varieties, the premier award was given to the Countess of VEALFIELD, Cullen (gr. Mr. A. Morton), for large and well-developed blooms; 2nd, Mr. BAIRD. A class was provided for four vases of Chrysanthemums only, but to be competed for by gardeners of Edinburgh and Leith. Mr. STENHOUSE, Tipperlin Cottage, was the only competitor in this and the smaller corresponding class for two vases.

Some good blooms were seen in the class for 12 varieties, the prizes going to Messrs. HUTTON, NICOLL, and BEISANT in the order named. A fair competition obtained in the decorative classes, Messrs. HAY, FERGUSON, KIDD, HOGG, and TODD being the chief prize-winners. Exhibits of single Chrysanthemums formed a large and pretty section. Messrs. KNIGHT, BRAYTON, and GALLOWAY were the leading prize-winners in this section.

Plants.—Displays of plants other than Chrysanthemums were, considering the lateness of the season, above the average in quality, especially those staged by Lady STEEL, Boroughfield (gr. Mr. Michie); and D. R. M. HUIE, Esq., Hollywood (gr. Mr. Pulman), to whom the chief prizes were awarded. There were only two groups of Chrysanthemums, that to which the 1st prize was awarded being staged by Col. E. R. S. RICHARDSON, Ballathie, Stanley (gr. Mr. Davis).

Fruit was particularly well shown. The Duke of WESTMINSTER, Eaton Hall, Chester (gr. Mr. Barnes), staged good Grapes, a Pineapple, Meions, Pears, and 20 Apples in the 24-dish class, the exhibit being awarded the 1st prize. Lord ELPHINSTONE, Carbery (gr. Mr. Kidd), the only other exhibitor in the class, won the second prize. Mr. BARNES, Mr. GRINDROD, Hereford, Mr. SINCLAIR, Drem, Mr. GALLOWAY, Gosford, and Mr. MELVILLE, Dunrobin, also contributed largely in the classes for Apples and Pears. A class for a collection of eight dishes of fruits brought only two exhibitors, Mr. GALLOWAY and Mr. PIRIE, Dalhousie Castle, the prizes being awarded in the order of their names. Grapes were an important feature, Mr. LESLIE, Pitculen, Perth, showed excellent bunches in most of the classes, as also did Messrs. BARNES, GALLOWAY, KIDD, PIRIE, STEWART (Dunkeld), HIGHGATE (Yester), and SHIELLS.

Vegetables were numerous and of fine quality. The Duke of PORTLAND, Welbeck (gr. Mr. Gibson), secured the President's prize offered for 12 sorts of vegetables, with large and clean produce; 2nd, Earl of HOME, Bothwell Castle (gr. Mr. Bell). In the smaller class for a collection of six sorts, Mr. McMICHIE, Hillfort,

Dollar, secured the 1st prize and Mr. HIGHGATE the 2nd prize.

Non-competitive exhibits were less numerous than usual. They included a selection of dried fruits and other produce from South Australia, which was awarded a Gold Medal, and Apples from British Columbia (Gold Medal). Messrs. J. & A. GLASS, Princes Street, staged floral devices (Gold Medal). Messrs. DOBBIE & Co., Rothesay, showed Onions and Potatos (Gold Medal). Mr. D. W. THOMSON, 113, George Street, displayed a collection of berried shrubs in variety (Silver-Gilt Medal). A Silver-Gilt Medal was awarded to Messrs. STORRIE & STORRIE, Dundee, for a collection of fruit trees, hardy fruits and plants, and Silver Medals to Mr. J. FORBES, Hawick, for Carnations and Asters; Messrs. BOYES & Co., Leicester, for Carnations; and Messrs. WELLS & Co., Mersham, for Chrysanthemums. A First-Class Certificate was awarded to Clara Wells, an Incurved variety.

WINCHESTER CHRYSANTHEMUM.

NOVEMBER 14, 15.—This annual show was held in the Guildhall on these dates. The exhibition was a success, the exhibits being of remarkable quality, and embracing many sections of horticulture.

Groups of miscellaneous plants arranged for effect were exceedingly good: the principal subjects employed were well-flowered Orchids, Poinsettias, Amaryllis, Begonias, Codiaeums (Crotons), Palms, and Ferns. The premier award in this class was made in favour of F. C. BIRCH, Esq., Clovelly, Winchester (gr. Mr. E. Long), who employed some graceful sprays of *Oncidium varicosum* Rogersii with good effect; 2nd, A. P. RALLI, Esq., Twyford, Winchester (gr. Mr. J. Hughes).

In the class for nine Chrysanthemum plants suitable for conservatory decoration, and each specimen having not fewer than five blooms, Col. DICKINS, Edge Hill, Winchester (gr. Mr. G. Adams), was awarded the 1st prize for excellent plants that were carrying large blooms of good quality; 2nd, the Rev. D. M. MOORSON, Holyrood, Winchester (gr. Mr. H. Gigg).

In a class for nine plants of white and yellow-flowered varieties of Chrysanthemums, Col. DICKINS was again successful with good plants of Niveus, F. S. Vallis, C. H. Curtis, Mrs. Judson, and Mme. Oberthur; 2nd, J. A. FORT, Esq. (gr. Mr. G. Cousins).

Cut blooms.—Competition was keen in the classes for cut blooms, and the exhibits were generally of high quality. In the Japanese section there were many competitors. In the class for 36 blooms in not fewer than 24 varieties, four growers competed. MARTIN HODGSON, Esq., Morton House, Kingsworthy (gr. Mr. A. J. Marsh), won the premier award with full-sized, massive examples of Bessie Godfrey, Magnificent, F. S. Vallis, J. H. Silsbury, Duchess of Sutherland, Mrs. F. W. Vallis, Algernon Davis, Reginald Vallis, &c.; 2nd, PANTIA RALLI, Esq., Ashted Park, Epsom (gr. Mr. G. J. Hunt).

Much the best exhibit of 24 blooms in not fewer than 18 varieties was shown by Major CHICHESTER (gr. Mr. B. Hollis). Mrs. OGILVIE (gr. Mr. L. Dawes), Rosecroft, Hambleton, was a creditable exhibitor in this class.

In the class for six varieties of Japanese Chrysanthemums, three blooms of each variety, arranged in a vase, the executors of the late Lady ASHBURTON (gr. Mr. G. Hall) won the 1st prize with handsome blooms of such varieties as Mme. P. Radaelli, F. S. Vallis, W. Jinks, and Edith Smith.

Incurved varieties.—Exhibits in this section were excellent. For 36 blooms in not fewer than 24 varieties there were three contestants. M. HODGSON, Esq., was distinctly 1st with large, handsome flowers; 2nd, P. RALLI, Esq.

Decorative varieties, not disbudded and arranged in vases, made a brilliant display. In the class for six varieties Mr. A. E. TAYLOR, 3, Hillside Terrace, Winchester, was placed 1st for an exhibit of the highest excellence. The blooms were shapely, clean, and well displayed, Mr. BIRCH followed.

Single-flowered varieties were also well staged. The best six bunches were displayed by A. P. RALLI, Esq.; 2nd W. H. MYERS, Esq., Swanmore House, Bishop's Waltham (gr. Mr. G. Ellwood).

Grapes were a feature of the show, and exhibits of vegetables were numerous and good.

LIVERPOOL HORTICULTURAL.

NOVEMBER 13, 14.—The annual show of this association was held on these dates in the Drill Hall, Upper Warwick Street, a spacious building, but very dusty, and lacking in artificial light. The entries were slightly fewer than those of last year, but the high quality of preceding shows was well upheld. The attendance, however, was poor, the gate money only totalling half that of the 1906 show.

Chrysanthemums in pots.—Some good examples of trained plants were seen, the chief winners in this section being Mr. T. Hitchman (gr. to ARTHUR EARLE, Esq.); Mr. R. T. Bushell (gr. to L. NOBLETT, Esq.); Mr. E. Wharton (gr. to J. FINDLAY, Esq.); Mr. J. Watson (gr. to JAMES BIRCH, Esq.); and Mr. F. Keightley (gr. to Mrs. DUNCAN).

Cut flowers.—Greater competition has been seen in former years, but this notwithstanding, the classes were well filled. In the class for 48 cut blooms, including 24 Incurved and 24 Japanese varieties, Sir W. H. TATE, Bart., Woolton (gr. Mr. Geo. Haigh), won the 1st prize with large bright flowers, the best of which were of Japanese varieties, such as Leigh Park Wonder, F. S. Vallis, Valerie Greenham, Algernon Davis, W. E. Etherington, Reginald Vallis, Mrs. W. Knox, W. R. Church, &c. 2nd, E. ELLIS, Esq. (gr. Mr. J. Davies), with fine blooms of J. H. Silsbury, E. J. Brooks, H. Perkins, Mafeking Hero, Mrs. T. Dalton, Buttercup, G. F. Evans, &c.

Mr. J. YOUNG won the 1st prize in a class for 18 Incurved Chrysanthemums, distinct, with excellent flowers, and R. HOBSON, Esq. (gr. Mr. W. Wainwright), led in the similar class for 18 Japanese blooms, distinct.

Twelve Incurveds, distinct.—JOSEPH SMITH, Esq. (gr. Mr. J. H. Kefford), took the lead for 12 Incurved blooms, whilst in the two classes, the one for six Incurved blooms, to be shown in two vases; and the other for six Japanese blooms similarly displayed, Mr. J. MACFARLANE won the 1st prize.

The best six vases of single Chrysanthemums were put up by Mr. T. NICHOLSON.

The classes devoted to other species of plants were well contested, and there were many fine exhibits of fruit.

Non-competitive exhibits were set up by those following:—Messrs. DICKSONS, Chester, staged Chrysanthemums, Roses and Apples; Messrs. CLIBRANS, Altrincham, showed Chrysanthemums; Messrs. FISHLOCK BROS. had cut flowers; Messrs. KER & SONS, Liverpool, displayed Salvia, Ferns, and Cyclamen; Messrs. THOS. DAVIES & Co. had Cyclamen, Lily of the Valley, and Liliums; Mr. C. A. YOUNG showed Carnations; Mr. W. ROWLANDS displayed Carnations and Bouvardias; Messrs. MOORE exhibited Orchids in variety; Mr. H. MIDDLEHURST had Liliums, Spiræas, &c.; Messrs. W. WELLS & Co., Mersham, Surrey, put up a group of Chrysanthemums.

YORK CHRYSANTHEMUM.

NOVEMBER 13, 14.—This autumn show was again held in the exhibition building, which furnishes an excellent site for a flower show.

Groups of Chrysanthemums and foliage plants were of the usual first class quality seen at York. Cut blooms were of an average quality only, whilst specimen plants have deteriorated considerably in this neighbourhood in the last two years, although at one time this show produced a really fine display in this direction.

Decorative varieties are very largely cultivated in the York district.

Valuable prizes were offered for a group of Chrysanthemums mixed with foliage plants for effect. Five growers competed, thus making a bold display, which was staged down the centre of the main hall. Each group occupied an area of 100 square feet. Mr. J. G. PETTINGER, Kent Road Nurseries, Harrogate, won the 1st prize with very finely developed Chrysanthemums and good foliage plants, all well blended together. The FREDERICK'S HOTEL CO. (gr. Mr. L. Hanchant), Harrogate, was awarded the 2nd prize for a group in which the Chrysanthemum blooms were smaller.

Groups arranged as pillars 17 feet high, and as much as 6 feet wide at their bases, and furnished with decorative varieties of Chrysanthemums and green foliage plants formed an

important feature of the show. The best of these exhibits was put up by Mr. G. COTIAM, Alena Gardens, Cottingham, Hull. There were four contestants.

The best group of Chrysanthemum plants was exhibited by Mr. J. M. PETCH, St. John's Street, Bridlington, who showed dwarf plants having excellent blooms; 2nd, W. TALBOT AGAR, Esq., Brockfield Hall, York (gr. Mr. W. Barnes), with a greater profusion of flowers, but they were not of so fine a quality as those in the 1st prize group. In the amateurs' classes were seen several good groups of Chrysanthemum plants.

Cut blooms.—In the class for 36 Japanese blooms in not fewer than 24 varieties, Mr. W. IGGULDEN, Frome, was awarded the 1st prize, and the Marquis of NORTHAMPTON, Castle Ashby (gr. Mr. A. R. Searle), the 2nd.

The Earl of FEVERSHAM, Duncombe Park, Helmsley (gr. Mr. D. Williams), won in the class for 12 Japanese blooms with creditable examples of popular varieties.

Incurved varieties were of fair quality. The Marquis of NORTHAMPTON was the leading exhibitor in this section.

The classes for single-flowered varieties were interesting. In that for six bunches of these flowers, the Right. Hon. H. W. FITZWILLIAM, Wigganthorpe, York (gr. Mr. A. Alderman), won the 1st prize with a bright, attractive exhibit.

Decorative varieties.—In the class for 12 varieties of decorative Chrysanthemums staged in vases, five growers entered. Messrs. THEAKE-STONE, The Nurseries, Hull Road, York, won the 1st prize with an admirable display.

A Gold Medal was awarded to Messrs. J. BACKHOUSE & SON, York, for a non-competitive exhibit of hardy fruit and miscellaneous flowering plants.

DUMFRIES AND GALLOWAY HORTICULTURAL.

NOVEMBER 16.—A meeting of this society was held in the Town Hall, Dumfries, on the above date. Provost Nicholson, Maxwelltown, occupied the chair. The secretary and treasurer, Mr. R. G. Mann, read a statement of the funds of the society, showing that there was a credit balance of £22 10s. The Chairman of the directors, Mr. R. Service, said the society having some years ago fallen into an unsatisfactory condition, the management had endeavoured to re-establish it upon a firmer basis. They, however, thought that others should take up the work, and they did not intend to offer themselves for re-election at present.

This report was adopted, and, after a motion to appoint a provisional committee to revise the rules, &c., had been defeated, a new directorate was appointed. Provost Nicholson was appointed chairman, Mr. J. Henderson, Elmbank, vice-chairman, and a committee of ten others, with power to add to their number. Mr. R. G. Mann was re-appointed secretary and treasurer.

READING LITERARY AND SCIENTIFIC.

"THE WONDERS OF FERN LIFE."

ON Thursday the 7th inst. at a meeting of this society in the Lecture Hall, Friar Street, Reading, with Dr. F. W. Stansfield in the chair, and a numerous audience, Mr. Chas. T. Druery, V.M.H., F.L.S., gave an interesting lecture, illustrated by a large number of lantern slides, in many cases of a unique character. Commencing with an allusion to the wonders which revealed themselves in every branch of natural study if properly investigated, he stated that Ferns possessed their own peculiar marvels, and in some respects far and away transcended flowering plants in biological interest. In the first place, it was pointed out that although nowadays Ferns are regarded chiefly as merely pretty foliage plants, and their industrial utility was almost nil, had it not been for the existence of Ferns in the far distant past, our coal seams would not have been formed, and humanity would consequently have been deprived of one of the main factors in its industrial and commercial developments. An ideal picture of one of the Fern forests of the coal period was thrown on the screen, and was followed by one of an actual fossil Fern remarkably like the bracken of to-day. The difference

between spore-bearing and seed-bearing plants was then described, together with the life history of the Fern, illustrated by photographic reproductions of Count Suminski's drawings of the various stages, made in 1843 at the time of the discovery of the last link in the chain of phenomena which culminated in the production of a young Fern.

The lecturer then explained how this life cycle was varied and short-circuited as it were by nature in some varieties of Ferns, and from this proceeded to illustrate the wondrously sportive nature evidenced so greatly in native species, many beautiful slides showing the choicest forms obtained by hunting for sports and by subsequently subjecting such plants to selective culture. The wondrous fertility of Ferns as sport-producers was shown upon the screen by means of a simple multiplication sum, demonstrating that even a comparatively small growing Fern could produce in a single season from a single plant over 1,100 millions of spores, each of which was capable of producing several plants, while large-growing tree Ferns could multiply these results by thousands. The far greater value of the beautiful British "sports" as decorative plants than many exotics was dwelt upon, and Mr. Druery deprecated the crowding of gardens with the common forms of our native species when much finer and equally hardy varieties were available. The lecture concluded with a representation of the lecturer's Fernery, clearly demonstrating what a splendid effect could be produced in a perfectly cold house by British Fern varieties alone.

WARGRAVE CHRYSANTHEMUM.

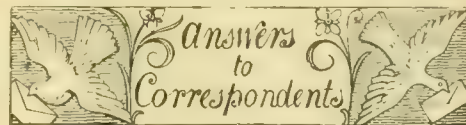
THE sixth annual show of Chrysanthemums, fruit and vegetables organised by the above association was held recently in the Woodclyffe Hall, Wargrave. The exhibition was non-competitive, and was in aid of the Royal Gardeners' Orphan Fund. A large number of visitors patronised the show, especially in the evening. Of the numerous exhibits, the principal were:—A group of Chrysanthemums shown by C. S. HENRY, Esq., M.P. (gr. Mr. F. Goddard); 100 dishes of fruits exhibited by Mrs. NOBLE (gr. Mr. T. Powell); a display of Chrysanthemums and Begonia Gloire de Lorraine exhibited by A. E. HUGGINS, Esq. (gr. Mr. D. Turner); and a collection of fruit from the gardens of M. RHODES, Esq. (gr. Mr. T. Haskett). After paying all expenses, a cheque for £6 10s. was sent to the secretary of the Royal Gardeners' Orphan Fund, thus making a sum of about £56 sent to the various gardening charities during the six years the shows have been held.

Obituary.

GEORGE PHILIP.—There were laid to rest on Tuesday afternoon, 19th inst., in Nellfield Cemetery, Aberdeen, the remains of Mr. George Philip, superintendent of the Stewart Public Park, Aberdeen. When the land which now comprises the Stewart Park was acquired by the Corporation of Aberdeen, Mr. Philip was engaged by the Town Council to fulfil the duties of head gardener, and during the dozen years which have elapsed since then Mr. Philip has occupied that position. The citizens of Aberdeen know well the splendid work Mr. Philip has done in this beautiful park. For a number of years previously Mr. Philip was head gardener at Blackhall Castle, Banchory-Ternan, Kincardineshire, and he left that position to undertake the duties at Woodside, the district of Aberdeen served by the Stewart Park. Mr. Philip took a great interest in the affairs of the Royal Horticultural Society of Aberdeen, and was convener of several of the committees. He was 54 years of age, and leaves a widow and a young family.

CHARLES SCOTT.—Many botanists and gardeners who, during late years, have visited the Glasgow Botanic Gardens, will regret to learn of the demise of the principal propagator, Charles Scott, who died from an attack of pneumonia on the 12th inst. in his 44th year. Scott was born at Ladykirk, Berwickshire, where his father was gardener for 43 years. During ex-

perience in good gardens in Scotland and England he acquired an excellent knowledge of gardening. His spare time was devoted to the scientific study of plants, and he possessed such general knowledge of their structure that he proved a most successful propagator. In late years he devoted his attention to the study of mosses and hepatics, and to his enthusiasm and zeal much of the success of the "Mossery" in the Botanic Gardens, which is far the finest in the country, is due. His kindly disposition endeared him to all the garden staff, by whom and a large circle of plant lovers his untimely death is deeply mourned.



AGARICS: C. B. G. The specimens when received were much dried and shrivelled, and out of shape, but they resemble *Clitocybe tuba*, and are probably that species.

BLACK HAMBURGH VINE IN A POT 11 INCHES IN DIAMETER: J. W. A. The plant, as stated by yourself, will have rooted into the soil beneath the pot, and it should not be disturbed. Meanwhile protect the pot and stem from severe weather by affording them a covering of straw or mats. In the month of March let the pot be broken up, but not the ball of earth and roots. Prepare three or four bushels of turfy loam, and mix with this a barrow-load of lime-rubble and wood ashes, adding a little chemical vine manure. Place this compost around the ball, and disentangle any roots that you can get at without greatly disturbing the soil. Add some of the compost wherever it can be worked into, and make the whole firm. A small enclosure of stone resembling rockwork can be built around the whole mass. This will be sufficient to support the vine for two years to come. Prune the young vine after the leaves have fallen.

CARNATION RUST: A. L. You should have forwarded examples of diseased foliage. The two principal fungus diseases of Carnations, *Helminthosporium echinulatum* and *Uromyces dianthi*, are both checked by spraying with potassium sulphide. The better plan, however, is to stamp out the disease by burning all affected leaves and any crippled plants; afterwards endeavour by good culture to keep the plants free from disease.

CLEARING HALF AN ACRE OF LAND FROM COUCH GRASS: Olga. It would be of no use to trench in and bury the roots under two or three spits of soil, the weed being certain to re-appear on the surface in the course of the next two years. It would be better to bastard-trench the land, using a steel digging-fork instead of a spade, collecting the pieces of the roots, and breaking the clods to pieces, so as to extract all of them. In digging, the first trench, the upper soil should be searched for the roots before it is wheeled to the end of the quarter, and the soil at the bottom of the trench be dug over and all roots taken out that can be found. Below this depth the roots are not likely to have penetrated, if the land has never been deeply cultivated. Each succeeding trench should be treated in the manner already described. The second spit, although dug as deep as the fork will go, should be left *in situ*, unless it is of good quality, and in that event half a spit or less might be brought up to the top. The hoe must be kept diligently at work all through the summer, and every bit of couch grass that shows should be forked up. Quick-growing crops, such as Lettuces, Radishes, French Beans, early Potatoes, early Carrots, in lines, or any other crop which will need to occupy the land only for a few months, are the best, the frequent turning of the soil then required affording opportunities for the removal of the roots of this weed. Several years would be needed to cleanse the soil entirely. It is a good plan to throw the weeds into a heap, with or without fresh stable manure, and let the whole heap ferment strongly, turning the sides once or twice into the centre of the heap,

so that all roots may be destroyed by the heat thus caused. Another, although more troublesome, method is to let the roots get partially dried, turning them about in the manner of haymaking, and burning them when they have become sufficiently dry.

CÆLOGYNE CRISTATA: *W. R. H.* You had better let your plants flower in the natural manner. *Cælogyne cristata* does not like to be perfectly dried off at any period of its growth. It merely requires that the supply of water should be reduced after the old pseudo-bulbs have completed their growth, a condition which may last until the new flowering growths appear. The pseudo-bulbs should not be allowed to approach such a condition as shrivelling. Rain-water is best for all plants.

CÆLOGYNE LEAVES INJURED: *J. M.* The injury has doubtless been caused by the vaporising with hydrocyanic acid gas. The receptacle from which the gas is evolved should be placed in the centre of the path and as far away from any plants as is possible. When the gas is evolving, it should be distributed in the house by means of a "punka" worked from outside the house by means of a string. We cannot trace the fruit you mention.

HALF AN ACRE OF LAND: *Gardener.* We cannot undertake to sift such matters as those published in the daily and weekly lay Press. The foundation for some of the statements is probably of the slightest description.

HAWTHORN SEEDS: *J. R.* Place the "Haws" in a heap and mix them with sand equal to about half of the bulk. Turn the whole over with a spade occasionally so as to facilitate the rotting away of the pulp or flesh. The seeds can afterwards be easily separated from the sand by means of a sieve.

NAMES OF FRUITS: *P. M.* 1, Marie Louise; 2, Knight's Monarch.—*H. B. Sale.*—1, Beurré Diel; 2, Madame Treyve.—*J. H. Shobdon.* 1, Shepherd's Fame; 2, Norfolk Beefing; 3, Napoleon III.; 4, Doyenné du Comice.—*F. D.* 1, Doyenné du Comice; 2, Glou Morceau; 3, Autumn Nells; 4, Beurré Dumont; 5, Beurré Diel; 6, Napoleon.—*W. D. & Sons.* 1, Gipsy Queen; 2, not recognised.—*F. L. W.* Grape Gros Guillaume, often known in gardens as Barbarossa.—*W. Jajcock.* Apple Sturmer Pippin; Pear Bergamotte Espéren.—*W. F. B.* 1, Conseiller de la Cour; 2, Josephine de Malines; 16, Pitmaston Duchess; 40, Marie Benoist.

NAMES OF PLANTS: *H. B.* *Cetrea arborea* *S. G. & Sons.* Probably a form of *Cupressus sempervirens*, but the specimen is not sufficiently complete for verification.—*R. E.* Specimens without numbers. The Herbaceous plant is *Saponaria officinalis* fl. pl., the tree is *Quercus Phellos*, and the Evergreen shrub *Rhamnus Alaternus* var. *angustifolius*—*A. M. N.* 1, *Magnolia conspicua* var.; 2, *Jasminum revolutum*, a form of *J. humile*; 3, *Veronica speciosa*; 4, *Myrtus Ugnii*; 5, *Phillyrea latifolia*; 6, *Schizostylis coccinea*.—*Hortus Servus.* 1, *Satureia montana* (Winter Savory); 2, *Melissa officinalis* (Balm); 3, *Artemisia Dracuncululus* (Tarragon); 4, *Hyssopus officinalis* (Hyssop); 5, *Origanum Onites* (Pot Marjoram); 6, *Marubium vulgare* (Horehound).—*F. L. W.* 1, *Calanthe Veitchii*; 2, *Calanthe vestita*.—*T. H.* 1, *Epidendrum umbellatum*; 2, *Ionopsis utricularioides*; 3, *Ada aurantiaca*; 4, *Lycaste xytriophora*; 5, *Aerides japonicum*.—*A. Y.* 1, *Nerine sarniensis*; 2, *Gladiolus tristis*; 3, *Cyrtanthus lutescens*.—*E. M.* *Trichosma suavis*, a very fragrant and pretty cool-house Orchid. The *Eranthemum* leaves will be examined.—*J. H. T.* *Dracocephalum Ruyschianum*.—*E. A. D. White.* *Euonymus nanus*.

NERINES: *B. L.* The treatment you adopted in 1906 is correct, as, in the position then given the bulbs, they became thoroughly ripened, the atmosphere being clear and dry. The quality of the air in the greenhouse is not quite the same, and, in conjunction with the prolonged dull weather, the change favoured the production of leaf-growth to the detriment of the bloom.

NOVA SCOTIAN APPLES: *H. G. K.* In respect to our suggestion in last week's issue that the variety intended was probably King of the Pippins, Mr. George Monro, of Covent Garden Market, has kindly written us stating that the variety "is King of Tompkin's County,

but they are known simply all through the trade as Nova Scotian 'Kings,' and the fruits are very much larger than King of the Pippins." Do our colonists in Nova Scotia also cultivate King of the Pippins?

PINE TREE: *J. H. B.* The soil you send found about the roots is permeated with a white fungus mycelium which proceeds in the first instance from some rotten stump, or buried wood. This soil should be removed, and replaced. If possible the source of the fungus should be ascertained and removed, afterwards the soil should be trenched and disinfected by the addition of lime. The danger is liable to extend to neighbouring trees unless a deep trench is cut around the infected spot.

PLAN OF A ROSE GARDEN ON AN AREA 16 YARDS SQUARE: *A Reader.* There are all sorts of ways in which a Rose garden might be formed on such an area. The sketch at fig. 151 will suggest to you one method of carrying out the work. In the centre of the design (1) may be planted climbing varieties, and these can be trained to form an arbour, or their growths may be suspended to a central pillar or stake, as shown in fig. 133 in the last week's issue.

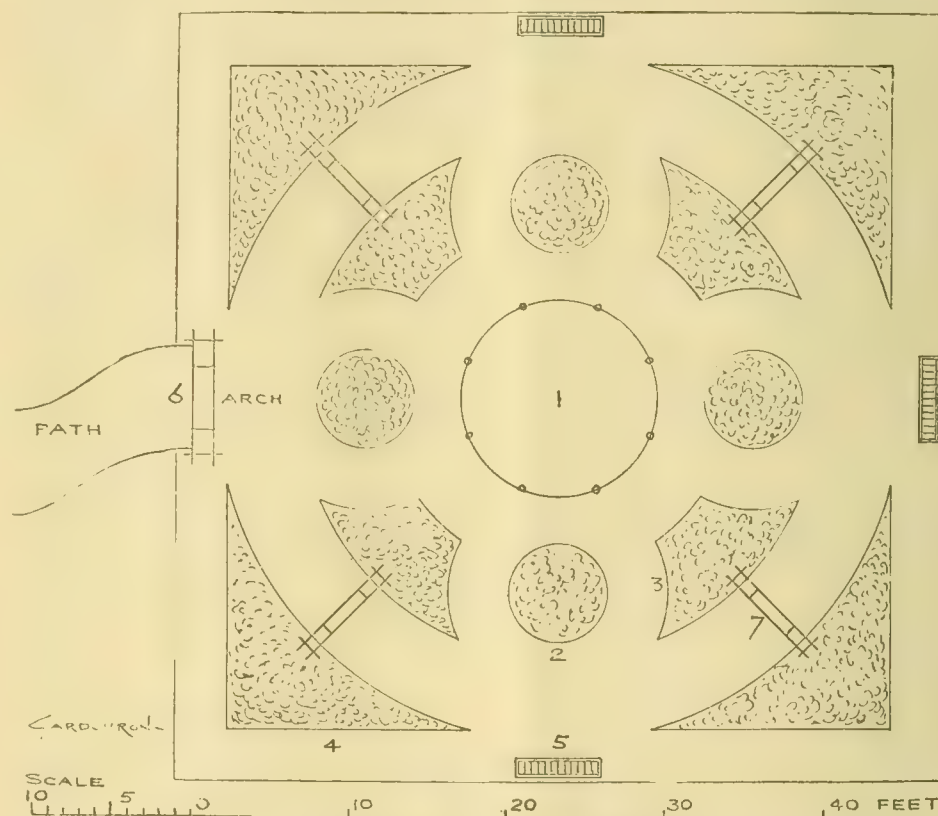


FIG. 151.—PLAN OF A ROSE GARDEN.

(2) These four circular beds should be planted with dwarf Polyantha Roses, using varieties of one colour only to each bed. Between these are beds (3) that can be planted with Tea or Hybrid-Tea varieties of distinct colours. The corner beds (4) should be planted with Hybrid-perpetual varieties in clumps of three plants of one variety, and interspersed with standard plants. Seats in the recesses (5) should have rustic arches above them trained with *Rosa Wichuraiana* and other rambling Roses. The entrance (6) should consist of an arch-covered way, while four rustic arches (7), spanning the grass-covered walk, will complete the design.

PLANTING OF FRUIT TREES: *J. E. Meaford.* An impenetrable base can be made in various ways, and almost any hard refuse, brickbats, stones, &c., can be used for the purpose. Ram the materials well into the bottom of the holes, then run amongst them some newly-slaked lime, allowing the whole to dry and set before the trees are planted. Chalk made wet, so that it can be rammed down to an even surface, answers very well. This base should be made at least 2 feet deep, unless the

land lies very low, when it need not be made quite so deep, but the trees should be planted on a mound-like elevation. If the trees bear a heavy crop of fruit and the weather is hot, a good mulching of farmyard manure will not only tend to keep the roots near to the surface, but stimulate the trees and therefore cause the fruits to swell well. You are probably aware that the Apple worked upon the Paradise stock, and the Pear on the Quince stock, are both shallow-rooting, and much more fruitful than either the Pear stock for the Pear, or Crab stock for the Apple; they would answer your purpose well. Such trees planted in the manner you suggest will need very little pruning, except whilst they are in a young state.

PLANTING PAVED WALKS: *L. S.* The article you refer to was printed in our issue for April 28, 1906, p. 253.

PRIZES AT FARMER'S CLUB COMPETITION: *H. R.* The garden labourers should be permitted to exhibit with the other cottagers on the estate.

ROSE LEAVES: The disease is caused by a fungus called *Septoria rosae*, which kills and bleaches

the epidermis of the leaf in patches. Diseased leaves should be removed from the plant before they fall.

SALE OF BULBS: *F. C. E.* We cannot interfere in this matter, but it is not difficult to understand your objections to the system of which you complain. The question, after all, is one for the seller himself and the employer of the canvasser to determine.

SLEEPING CARNATION: *H. F.* We do not think the white flower possesses merits superior to those of existing varieties.

TENNIS COURT: *Carnation.* Our columns are too crowded this week to admit of a diagram. All the information you require, with diagram, may be found in the *Calendar of Garden Operations*, obtainable from our publishing department, price 7½d., post free.

COMMUNICATIONS RECEIVED. Interrogavi—*Jourdain* and *J. C.* (next week).—*W. D.* and *Sons*. *S. C.*—*F. F.* Dr. *I. B.*—*A. D.*—*F. M.*—*E. M.*—*A. O.*—*W. B. L.*—*A. G.*—*L. W. F.*—*E. J.*—*H. M. V.*—*G. P. M.*—*S. A.*—*S. R. D.*—*Anxious*—*E. W.*—*J. C. P.*—*P. McL.*—*J. C.*—*Mrs. A.*—*A. C.*—*J. C.*

THE

Gardeners' Chronicle

No. 1,092.—SATURDAY, November 30, 1907.

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THE FORCING OF BULBOUS PLANTS.

THE forcing of bulbous-rooted plants during the early winter months is one of the phases of modern plant-growing in which most gardeners desire to excel. That such is not the case and that the successes are still all too freely interspersed with failures requires no further confirmation than the many enquiries relating to the latter which are answered from time to time in the "Answers to Correspondents" page of every gardening newspaper.

Failure in a small place, where perhaps but a few hundred bulbs are forced each year, is a serious matter. For this, however, there is a remedy, and there is no reason why anyone having charge of a garden should a second time be guilty of even an error of judgment in these and kindred matters.

Chief among the essentials to success in this matter of early forcing is to make an early start by planting the bulbs at the proper time. To plant in November bulbs which should have been planted in the first half of September is to court failure so far as the successful forcing of such bulbs is concerned.

Once planted, whether in boxes or pots or other receptacle, it must be borne in mind by the cultivator that all bulbous plants do not

necessarily require the same treatment. In respect to Daffodils of all kinds and Hyacinths, I thoroughly soak the soil with water immediately they are planted; but Tulips, Lilies, Spanish Irises, and early Gladioli, when planted in soil that possesses ordinary moisture, require no such watering, and indeed, in my experience, are better without it.

For Daffodils and Hyacinths a rich soil is desirable, but for the other genera I have named, a soil generally lighter and less rich is to be preferred. The plunging or covering up for a season of all bulbous plants that will be required for forcing is a matter of some moment, and in the case of Daffodils and Hyacinths the top covering should be of considerable depth. They make the majority of their root fibres quite early after planting, and such root-fibres descend in a straight line. Most of the roots are produced at one time, and owing to the resistance they encounter in penetrating the soil below, they are liable to lift the bulbs completely out of the soil unless a sufficient bulk of the plunging material be afforded to counteract this pressure from below. A covering of 6 inches in depth will be ample, and coal ashes will be found very suitable. For the other genera named a lighter covering, such as one of cocoanut fibre refuse, is better, or this and coal ashes mixed together in equal parts. Soil should not be employed for a covering, being too cold and retentive of wet. I know that many amateurs entirely neglect to cover their pots of bulbs, and by such neglect they expose the bulbs to climatic vicissitudes that are by no means beneficial, but undoubtedly have a serious effect on the crops. The covering up of the bulbs is a simple and desirable process, and forms one of the little details that help in securing a full measure of success.

The next important step is the introduction of the bulbs into structures that are heated by artificial means, and it is here that many cultivators commit a very grievous error. More than once in my experience have I seen bulbs taken from the plunging beds in the open and introduced to the worst possible position in the greenhouse, viz., beneath the stage, not far removed from the hot-water pipes. I have seen them in such positions with the soil very dry when Hyacinths, Narcissus, &c., required their roots to be in a medium of quite opposite conditions. A few days under such treatment will have a very bad effect, for it is about the worst position that could be selected for the bulbs already starting into growth. The two genera just named are best when heat is applied gradually, though French-grown Roman Hyacinths are much less exacting in this respect than are those of Dutch growth.

Those varieties of Tulips which are known to be reliable for early-forcing, as La Reine, Yellow Prince, and the Van Thol class, require but little attention during the introductory stages. For these and for Roman Hyacinths there is no better place than a frame within the greenhouse, the frame being provided with bottom-heat. Into such a frame they may be placed without any delay. A moderate bottom-heat say of 60 degrees, at the first, will be ample. It is, however, essential that absolute darkness be assured and that the heat be kept

uniform, therefore free from fluctuations. A considerable length of stem and large size of blossom are items of the greatest importance in early-forced Tulips, and these qualities are best secured by attending closely to the details of culture. Compared with the Daffodil or Hyacinth, the Tulip requires less moisture than either, and this fact should be remembered when forcing is in progress. The boxes or pots of bulbs should, when placed in the bottom-heat frame, be stood upon a 2-inch thick bed of cocoanut fibre; the bulbs should be thoroughly watered and, subsequently, pots and all covered in to a depth of 6 inches with the fibre. Heat and moisture quickly permeates the entire bulk under these circumstances, and when the lights have been placed over the frame a quick and good growth is the result. By covering the frame lights with sacks the darkness is intensified and a greater uniformity of heat assured, all to the benefit of the crops. A week later the bottom-heat may be increased to 70 degrees, and later to 75 degrees or 80 degrees.

Tepid water only should be applied to the crop when thus forced, and the plants should be allowed to remain in the frame till the flowers have developed to their full size. A critical stage is reached at about this period, and it is highly dangerous to expose the flower to the full light before they are perfectly developed. Fogs are especially harmful at such a time, and the undeveloped buds after exposure to them rarely do much good. In the circumstances, therefore, the bulbs should remain in the darkened frame as before, the top-covering of the cocoanut fibre to be removed when the flower-buds are well in sight. One is frequently asked in reference to forcing, why pots of bulbs do not succeed when placed over the hot-water pipes? The answer has already been supplied in the recommendations I have made; the dry, arid conditions of such a position, the absence of darkness, and the lack of a moist uniform heat, are the principal causes of non-success. Many gardeners fail either wholly or in part by removing the crop from the influence of bottom-heat when the plant is but half grown. In early-forcing scarcely a more serious error could be made.

With the main exception that they require much larger supplies of water, the Roman Hyacinths may be treated as recommended for the Tulips. In their case it is necessary to remove the pots from the plunging material so soon as the earliest bells on the spike begin to expand, but the pots must remain on the bottom-heat bed and in absolute darkness until the spikes have fully grown.

In the forcing of Daffodils a different method has to be adopted, and apart from the first preparatory stage of early planting and plunging in the open, a second preparatory stage is reached when it is considered time to place the crop under glass. At this time cool or quite cold houses are best, and, indeed, greater progress is made under these conditions than is possible under heat. It cannot be too widely known that artificial heat applied at such a time has a retarding influence on the crop, and a species of sulkiness or contrariness is set up in the plants, from which ultimate recovery is very slow. Therefore, the operator would do well to adhere to the sound, simple practices of cultivating them on a cool base

in a cool house and affording them liberal supplies of moisture. At no time should there exist even an approach to dryness. Neither bottom-heat, darkness, nor plunging when indoors, are necessary or even desirable for Daffodils when being forced. A week after they have been taken indoors the house may be closed, and a few days later a little warmth turned on. Subsequently, by easy stages, the artificial heat should be increased, until at the end of four weeks an atmospheric temperature of 50 or 55 degrees has been reached. The most dangerous period in forcing Daffodils may be said to be past when the

are necessary at such a time. But there must be no half-measures in this question of moisture. Lack of root-moisture, a too arid condition of the atmosphere, excessive heat, or heat too early applied—these are the things that cause ruin and disaster to the best of bulbs. If I may single out a variety possessing peculiarities in a marked degree, that variety is the popular *Narcissus poeticus ornatus*. This kind should be allowed to remain in the open air to the end of the year, and then follow out the advice already given.

The number of Daffodils that may be forced readily and satisfactorily is not large, but for

NEW OR NOTEWORTHY PLANTS.

ERIA RHYNOSTYLOIDES, N. SP.

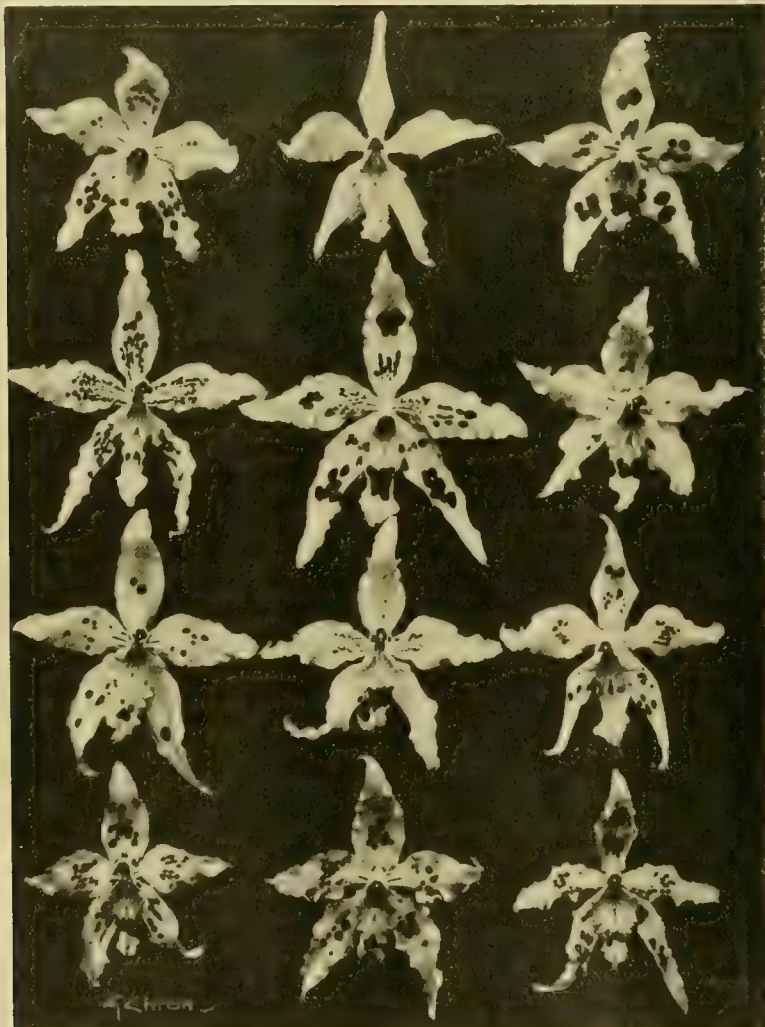
This is a very fine species, which is in the collection of the Hon. Walter Rothschild, M.P., Tring Park, Tring (gr. Mr. A. Dye), the specimen having been imported from Java. In structure the individual flower approaches most nearly to *Eria convallarioides*. The plant, however, is much larger than that of *E. convallarioides*, more fleshy in all its parts, and it bears a slight resemblance to that of the well-known *Rhyncostylis retusa* (*Saccolabium guttatum*) in the general appearance of its dense inflorescence. It is one of the showiest of its section, and a very desirable garden plant.

Eria rhyncostyloides, roots wiry, dark-coloured, pseudo-bulbs clustered, green in the young state, brown with silvery covering when mature, ovoid, compressed, showing deep openings where the old flower-spikes had been, 3 to 4 inches in height, 2 inches wide; leaves 3 to 4, 12 to 18 inches long, 2 inches wide, thick in texture, bright green. Inflorescence from the upper part of the pseudo-bulb 8 inches in length; rachis stout, slightly tomentose, the basal 2 inches naked, the rest bearing an equally-arranged cylindrical spike of 250 to 300 flowers. Pedicels and ovaries two-thirds of an inch, and having at the base of each an ovate acuminate, slightly concave reflexed, whitish-green bract. Flowers half an inch across; sepals ovate acuminate; mentum broad, obtuse; petals narrower than the sepals, lanceolate. Labellum obscurely trilobed, orbicular, concave at the base, which is tinged with rose colour, front acuminate. Column short, tinged with purple at the apex; anther-cap brownish red. The flowers are white with a slight blush tint, the labellum with rose-tinted base. The surface of the flower has a granulated, or frosted, appearance, and the ovaries and backs of the sepals are sparsely tomentose. J. O'B.

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM × ANDERSONIANUM.

MANY hybrids may be said to carry the stamp of their origin in both their habit and flowers. Especially is this the case in the numerous hybrids of *Odontoglossum crispum* and *O. gloriosum*, known collectively under the above name. Their hybrid origin was suspected from the date of the flowering of the first plant of this hybrid in 1868, having been imported the previous year in a batch of *O. crispum* by Messrs. Hugh Low & Co., of Clapton. It then passed into the collection of J. Dawson, Esq., of Meadow Bank, near Glasgow, and was named by Reichenbach in compliment to the gardener at Meadow Bank, the late Mr. James Anderson. Reichenbach, in describing the plant, pointed out its affinities to both *O. crispum* and *O. praestans*, but later when other plants of this hybrid had appeared, he wrote that it was probably a hybrid between *O. crispum* and *O. gloriosum*. As both these species are found growing together in certain localities on the western spurs of the eastern Cordillera of New Granada, it is probable that the last conjecture is the correct one. In the importations of *Odontoglossum crispum*, which have been so numerous of late years, many plants of this hybrid have occurred, showing every transitional stage between the two parents. The hybrids partake of the character of *O. crispum* in precocity of flowering, the flowers being produced nearly the whole year round, but the greater number of them flower between February and May. The great diversity in the forms of each parent species has also had its effect upon the hybrids, and is particularly noticeable in the illustration at fig. 152, representing 12 distinct forms, the ground colour of each row of flowers



[Photograph by C. P. Rutili.]

FIG. 152.—VARIATIONS IN THE FLOWERS OF *ODONTOGLOSSUM* × *ANDERSONIANUM*.

flower-scape has emerged from the orifice of the neck of the bulb. Another critical period is reached when the stem is fully grown but the flower is still imprisoned in the spathe. If this condition should last too long strangulation in some form or another follows, and withered and distorted trumpets in the case of the single varieties, and the so-called "blindness" in respect of the double ones, are the outward and visible results of cultural errors.

Root-moisture, atmospheric-moisture, and spraying (rather than hard syringing of the buds at this stage), are all the conditions that

very early flowering those suited to forcing may be taken in the following order:—

Single Van Sion as first early, to be followed by *Narcissus obvallaris*, N. Ard. Righ, No. *Telamonius plenus*, N. golden spur, N. princeps, N. Horsfieldi, N. Sir Watkin, N. Emperor, and N. ornatus.

For early supplies of bloom, and for which the four first-named varieties are best, the bulbs should be brought under glass at the end of November or early in December and given the treatment already prescribed. Growth will soon be apparent. E. H. Jenkins, Hampton Hill.

being quite distinct from that of the rest. In those of the top row the ground colour is pure white, the centre flower being the pure white *O. Andersonianum*, var. *virginale*, while those on either side differ greatly both in size and shape of the perianth segments, also in the size and colour of the spots. In the second row are forms with pink grounds, the centre flower being spotted with brownish-red and much larger than any other flower shown in the illustration. The flower on the right is the nearest approach to *O. crispum* of the whole batch both in size, shape, and colouring. In the third row, the ground colour is light yellow, the spots being mostly rosy-purple in colour. In the fourth, or bottom, row, the ground colour is deep yellow, suffused on the edges and back of the flowers with rose, while the spots are either reddish-brown or purplish-brown.

The crossing and re-crossing of these two polymorphic species and their numerous progeny by natural means has resulted in the production of numerous varieties, many being extremely distinct and beautiful. So numerous are the forms that there seems to be every possible combination of both parent species, a fact which has led to much confusion in their nomenclature, many of them being classed as varieties of *O. Andersonianum*, while others have been classed as varieties of the species they most nearly resemble; others again have been given specific rank. This is not to be wondered at in the least when one bears in mind the wide range in the forms of both parents, both in size and colouring, and to a less degree in the shape of the flowers. *C. P. Raffill*.

MESSRS. SANDER & SONS, ST. ALBANS.

THE natural consequence of undertaking the hybridising and raising of Orchids on a large scale is that, no matter how extensive the accommodation of glasshouses may be, the time will come when more houses will have to be built. That has been the position in which Messrs. Sander have found themselves on several occasions notwithstanding the great extent of their nurseries, when imported Orchids were the chief consideration. Relief was gained by drafting off the large batches of species to the Bruges branch of the establishment; yet again the inevitable has to be faced, and 17 new houses are in the course of construction, eight being already finished and several of them filled with seedling Orchids. The new block includes a model house for the raising of the seed and pricking off into their first pots the tiny seedlings, and with the elaborate contrivances arranged in the house, there seems to be but little difficulty in obtaining success in what always used to be regarded as the most critical stage of the life of an hybrid Orchid.

In the great maze of houses of the older part of the establishment there are other seed-raising houses, and commodious blocks of span-roofed houses to accommodate the young plants. These contain the more showy hybrids of new crosses, or the proved favourite crosses repeated by using the finest varieties. One house is filled with many thousands of *Brassavola Digbyana* crosses, both primary and secondary, the plants being generally three years old. Another house has similar crosses due to flower next season, and many are filled with hybrid *Cattleyas*, *Lælio-Cattleyas*, and various combinations, in which these showy species take part. So far as the present show of flowers is concerned, the honour can well be claimed by the *Cattleyas*, the hybrids of *C. labiata*, *C. Dowiana*, *C. Harrisoniana*, and others making a fine show, the best being *Cattleya Mantinii* and its variety *nobilior*, *C. Mrs. J. W. Whiteley*, *C. Fabia* (which is a rival of *C. Hardyana*, and very free to grow and flower), and *C. Clarkæ*, Sander's variety (obtained by crossing two fine forms of *C. labiata* and *C. bicolor*), a very bright purplish-rose-coloured flower with violet lip. Although a

dull season for Orchid bloom, there were a few in flower in most of the houses, specially noteworthy being some white forms of *Cattleya labiata* in the house which is filled entirely with albinos, and white-petalled forms with some colour on the lip.

In one block of houses devoted to seedling Orchids (a single stage in the first house held about 10,000 plants) were some pretty flowers, borne on plants raised between *Cattleya Gaskelliana* and *C. Harrisoniana*, and various other crosses. In one was a fine batch of a very distinct type of *Cypripedium Godetianum* in bloom, the flowers on one variety being creamy-white blotched with purple, after the manner of *C. bellatulum*. Here also was a plant in bloom of *C. Niobe Sander's* variety, which is a grand form, rather taller than other varieties, and bearing pretty flowers, the basal portion of the dorsal sepal being emerald green, the blade bright purplish rose on white ground, and the petals and lip yellowish, heavily tinged with purplish brown. Two houses in this block are filled with hybrid *Cypripediums*. Among those then in bloom were many that are pretty and distinct, but the best novelties are expected from those which will flower next year. Next is a large span-roofed house of *Cymbidiums* and *Sobralias*, both species and hybrids; the unique and beautiful *C. Sanderæ* was bearing a fine seed-capsule. In a house of *Phaius* and *Lycastes* there was a batch of *Epidendrum Wallisii*, raised true from seeds.

The connecting corridor was filled with *Dendrobium Wardianum*, *D. crassinode* and other showy *Dendrobiums*, all of which had made extraordinary fine new growths. Entered from the corridor are five long span-roofed houses that were filled entirely with seedling Orchids ranging from two to four years, the vigour of the plants being good throughout. In another house crosses of *Sophranitis grandiflora* and many promising unusual crosses were the most prominent. Among them was a small batch of a hybrid raised between *Tetramicra* (*Leptotes bicolor* and *Lælia harpephylla*), in the singular growths of which the characteristics of both the plants can easily be traced; and another of *Zygopetalum Mackayi*, crossed with *Chondrorhyncha Chesteronii*; one of the plants was already developing a spike, so that the result will soon be known.

In one of the warm seedling houses a number of fine specimens of *Phalaenopsis* were suspended overhead and growing most luxuriantly, the *P. Rimestadtiana* having enormous leaves and promising well for flower. In the lofty intermediate house, devoted principally to *Cattleyas* and *Lælias*, there was a good show of *Cattleya labiata* in great variety, *C. Bowringiana* and its hybrids, *C. Dowiana aurea*, and others; in the principal *Odontoglossum* house only a few were in bloom, together with some *Masdevallias*, *Scarlet Sophranitis*, *Cochliodas*, *Lycastes*, &c. In the block of *Cypripedium* houses, one of which contained a very complete collection of varieties of *Cypripedium* insigne, many of this species were in flower, the two best being the charming clear yellow and white *C. insigne Sanderæ*, and the large and well proportioned *C. insigne* (*Harefield Hall variety*).

Other Orchids specially noted in the collection included a batch of the pretty white *Vanda Watsoni*, an ally of *V. Kimballiana*, but much freer to grow and bloom, the little plants only a few inches high producing flower-spikes; the white *Phaius Zollingeri*, a very acceptable *Java* plant and probably a constant winter flowerer; a batch of the true old type of the white *Calanthe veratrifolia*, which used to be one of the effective plants in Orchid collections at exhibitions many years ago, and is still a very fine plant if grown in an ordinary stove-house with the foliage and flowering plants usually grown there. The same remarks apply to *Aerides*, *Saccolabiums*, and some other distichous-leaved species of that class; at St.

Albans their requirements are met by the provision of rockeries and ornamental pieces of water at the ends of some of the warmer houses, the rockeries being planted with *Begonias*, *Fittendorfs*, and various other ornamental-leaved plants. So situated, the gigantic specimen of *Archianthe Lowii*, often noted, is thriving remarkably well; some baskets of *Aerides viridis* and other *Aerides*, suspended above the foliage-plants, have rapidly increased in size, and are in fine condition; the *Angustifolius* also grow satisfactorily.

A special house is provided for plants forming seed-capsules, and an interesting prospect is revealed by some of the very wide crosses. As in most Orchid collections, the *Odontoglossum* and *Cochlioda* crosses are being worked diligently, but the latter are said not to respond so readily to the efforts of the raiser as some other genera.

NEW PLANTS.

More space is now given than formerly to the exhibition of new plants. Some of the previous introductions of the firm, such as the beautifully-variegated *Fourcroya Watsoniana* have increased in beauty, and among the quite new kinds are *Nepenthes Sanderiana*, with very large "pitcher," having abnormally broad ciliate wings and of very bright colour; a new and very elegant *Asparagus* of the *A. myriocladus* class, with very feathery, plume-like growths; several new Palms, one of which has pale green leaves spotted with dark olive green; another resembling a very finely-cut *Kentia*; *Codiaeum* (*Ardisia*) *trilobus Sanderi*, the perfection of a decorative plant, being of neat habit and having the basal and inner parts of the unequally trilobed foliage of a bright but cup yellow, the broad margin being equally bright green; *Licuala triphylla*, a remarkably dwarf Palm, only a few inches in height, and yet bearing a profusion of both flowers and fruits; a very brightly-coloured *Pereskia* with shining foliage coloured red, white, and green, and said to be a fine plant for baskets, pillars, or rockeries. Foliage *Begonias* of a new type are also being tested, and several promising Ferns, Cycads, *Anthuriums*, &c., sent by Micholitz, are under cultivation to test their worthiness as garden plants.

NURSERY NOTES.

GEO. BUNYARD & CO.

FEW more agreeable or instructive changes can be enjoyed by a gardener than an occasional visit to a nursery. There is a wide difference in the aims and systems of culture between the gardener and the nurseryman. The gardener aims to produce the heaviest and best crops from his fruit trees, and the choicest flowers from his plants. The nurseryman's aim, on the contrary, is to produce a crop of trees, shrubs, and plants for the gardener's service by propagation and growth on the most efficient and economical methods possible. One may learn much from the nurseryman, and I confess, as one of a party who visited Messrs. Bunyard's nurseries at Maidstone, in October, most of us learned much, although we were already old in years and experience. After a close inspection of some hours' duration, several matters impressed themselves favourably on our minds. First, there was the free, healthy, and clean growth of the enormous plantations of fruit trees, and another was the total absence of any abnormally strong, soft, or pithy growth on young trees. The credit for this healthy, hard growth, we observed, must not, I think, be attributed to good management alone—excellent as this is. It is, rather, in part, at any rate, due to natural position, and other favourable circumstances. The Allington Nursery is situated on high table-land exposed to all the winds that blow, also to all the sunshine for which the county of Kent is so famous, as well as to a

generous soil, neither too heavy nor too light, and in which the fibrous roots of trees luxuriate so amazingly—all most potent natural accessories in the successful growth of fruit trees.

Another point noticed, and an important one, too, was the system adopted of frequently lifting and replanting the trees. This, no doubt, has greatly helped to bring about the favourable condition of root and branch growth. The benefit derivable from frequent transplantation was further shown very forcibly in the splendid condition and size of some large specimens horizontal and fan-trained trees of Pears, Peaches, Nectarines, Plums, and Apricots. Although some of them are from 8 to 10 feet high, and as wide across, so fully furnished are they with masses of fibrous roots that they could be moved any distance as safely and successfully as trees of much younger

during the summer, not only for the purpose of keeping the land clean, but also for aerating and cultivating the soil, and that at less than half the cost of hoeing by hand.

In extensive plantations of fruit trees one naturally looked for some halt, blind, or deformed trees. We saw none, with the exception of a few scarce varieties held back for stock purposes and planted by themselves.

The stock of trained Peach and Nectarine

ripen in December and January. A valuable addition to late dessert Apples is found in the variety Mrs. Phillimore; the fruits are of medium size, and the flavour is sweet and pleasant. This variety remains in season from November until February. Like the song of the brook which is said to "go on for ever," so might I continue this note by remarking upon the splendid examples of growth amongst the Pear and other fruit trees.

More could be written of the extensive collection of coniferous trees and shrubs, of the large and representative collection of Roses, herbaceous and rock plants, not to mention the contents of the many glasshouses.

But I cannot close these remarks without making allusion to the magnificent collection of orchard house trees and fruits which we had an opportunity of seeing a few days before they were exhibited at the fruit show of the Royal Horticultural Society at Westminster. A finer exhibit of hardy fruit than this was has probably never been seen at this or any other show. *A Visitor.*

TREES AND SHRUBS.

BERBERIS WILSONÆ.

THE *Index Flora Sinensis* enumerates 25 species of *Berberis* as natives of China, but it is probable that when all the material recently collected in that country has been dealt with, the list will have to be considerably extended. Amongst other species brought to light since the completion of the *Index* is *Berberis Wilsonæ*.

A fine fruiting specimen of this new species was included in a group of choice shrubs shown by Messrs. James Veitch and Sons at the meeting of the Royal Horticultural Society on October 15, on which occasion the Floral Committee awarded it a First-Class Certificate (see note on p. 284).

In its native habitat *Berberis Wilsonæ* occurs on grassy mountains at elevations of from 2,000 to 5,800 feet in the neighbourhood of Tchien-lu, Western China.

It is an elegant low-growing shrub 2 to 4 feet high, with slender branches clothed with small leaves disposed in clusters at regular intervals along the growths. The leaves are somewhat variable in shape, but usually oblanceolate, obtuse, entire, occasionally 3-fid, about $\frac{1}{2}$ to 1 inch long by $\frac{1}{4}$ to $\frac{1}{2}$ inch broad. The upper surface of the leaf is bright green; the under side white. Subtending each cluster of leaves is a spreading three-forked spine, bright red in colour when young; the middle spine the longest, measuring $\frac{1}{2}$ to 1 inch, the two lateral from $\frac{1}{4}$ to $\frac{1}{2}$ inch in length.

The numerous berries which follow the small yellow flowers are produced on short stalks in clusters of from four to six; they are bright, coral-red where exposed to the light, yellowish on the opposite side, semi-translucent, surmounted by the remains of the stigma which appears as a slightly raised point.

Each berry contains from three to four greenish-yellow oval seeds.

So far as at present observed, the fruit is immune from the attacks of birds, and, in consequence, promises to remain on the plant for some time after attaining ripeness and colour.

In its native country the foliage is said to assume very brilliant autumn tints, but in the specimen exhibited the leaves were still green. From its small size, spreading habit, and neat appearance *Berberis Wilsonæ* is a suitable subject for clothing banks or margins of shrubberies, or, planted in the rock garden, its bright red berries would form a welcome colour in the autumn months. *H. Sponner.*



FIG. 153.—*BERBERIS WILSONÆ*, A NEW CHINESE SPECIES.

growth. The sight of these fine specimen trained trees made one envious to possess a new wall, in order to enjoy the privilege of clothing it at once with fruit-bearing trees.

Another point of culture worthy of note is that the rows of young trees were planted wider apart than is usually the case, the primary reason for this being that the land can be cultivated and kept clean by the use of a small horse hoe, which is kept constantly at work

trees was one of the finest and largest I had ever seen.

Besides the plantations of young trees already referred to, a large plantation of permanent bush-Apple trees were shown to us; perfect specimens in every way, many of them heavily laden with fruit. We wish the advocates of non-pruning could see these perfectly-formed and moderately-pruned bushes. Every main branch of each bush an independent cordon, many of them studded all over from base to summit with the choicest fruits.

The following new or little-known varieties of Apples were spoken of highly:—Ben's Red is a September Apple, rivalling in colour Worcester Pearmain, and of better flavour than that variety; a good bearer, and promises to become a grand early market Apple. Belle de Boskoop is useful for dessert or kitchen purposes, free-bearing and of large size, it ripens in October and November. Baron Wolseley is a kitchen Apple of immense size, a good bearer, resembling Warner's King, but it develops more colour than that variety on the side exposed to the sun. Foster's Seedling is a seedling from Cellini; a splendid bearer, and not liable to canker; the fruits are very handsome, and ripen in October and November. Winter Ribston is a Continental variety, a russety fruit of first-class flavour. It has a habit of growth similar to that of Blenheim Pippin, and bears freely, ripening in November and December. Norfolk Beauty, the result of a cross between the varieties Waltham Abbey seedling and Warner's King; it produces large, golden-coloured fruits, which are excellent for cooking purposes, and

PLANTING APPLE-TREES ON HEAVY LAND.

IN choosing a new site for an Apple orchard, select somewhat elevated ground that slopes to the south or south-west. In such a position the water will drain freely away from the trees or holes: the effects of frost will be less severe when the trees are in flower, and the ground if sloping will be much drier and, therefore, warmer. The situation should if possible be sheltered on all sides from cold winds. Holes 10 feet in width and 3 feet 6 inches in depth should be dug for planting, and if the soil is enriched and well cultivated, it will provide a sufficient rooting medium for many years. A drainage pipe 3 inches in diameter should be laid from the hole into a main drain that should run down between the rows. Place a foot-deep layer of large stones in the bottom of the hole, and cover these with turves. Fill the rest of the hole with good maiden loam fresh cut from an old pasture, and incorporate some fresh lime, chalk, wood ashes, and road scrapings with the soil. Fresh manure should not be used. If the soil is in a good condition, raise it 6 or 8 inches above the ground level, and let it remain at this height when the trees are planted. This will keep the roots drier in winter, and allow of them being lifted, should they afterwards require to be moved, more expeditiously. Planting in this manner will entail much labour and expense, but it must be done if the best results are to be secured. Half standard trees should be selected for planting, as this form of tree does not catch the wind so readily as tall standards, which are less easily pruned and trained. All exposed sides of the orchard should be planted with Nuts, Damsons, Bullaces, and other kinds of hardy fruits. In the kitchen garden bush and pyramid-trained trees are usually selected for planting, but the above remarks apply equally to their planting, and, as in the case of standard trees, they should be planted above the level of the ground because these also have to be frequently lifted before they arrive in a satisfactory fruiting condition.

Lime is one of the most essential fertilisers for heavy land, and especially in that devoted to fruit culture. In these gardens the fruit-trees are top-dressed in the autumn, as soon as the fruit is gathered. This practice helps to keep the roots warmer in winter, especially if the manure is pricked in with a fork after an interval of a few days: the mulching also tends to keep away insect pests. The trees should be syringed or sprayed in the autumn and spring with an approved tree-wash.

In choosing the trees, they should, if possible, be obtained from a nursery where the ground is moderately heavy, for if they are raised on land that is light and warm, they will receive a check in their fresh quarters, and much time will elapse before they become accustomed to their new surroundings. The less the trees are pruned on heavy soil, the less prevalent will be canker. If they grow too strongly and will not fruit, they should be root-pruned, not with a spade, but with a sharp knife. Prune as little as possible in winter; if the branches are too thick, thin them judiciously after they have fruited, as the wound or cut will then heal before winter arrives. Summer pinching is preferable to winter pruning. Slow or weak-growing varieties may be pinched shorter than gross-growing kinds, as the latter often break into growth at their lower buds, which would otherwise develop into fruit-buds. The partial lifting of a few trees each year in the autumn, and working in some light soil mixed with slacked lime, is, in the case of fruit-trees on a heavy soil, also preferable to winter pruning. Canker is a serious affection common to

Apple trees on heavy land, and some varieties are more susceptible to the disease than others, but generally when the trees are growing freely canker is less prevalent. Dessert varieties such as Cox's Orange Pippin, Allington Pippin, Ribston Pippin, Charles Ross, and King of the Pippins may be grown against walls as cordons, the bottom of the border being concreted and sloping to the south. Varieties of Apples that succeed well in these gardens as standard and pyramid trees are:—*Dessert*: Worcester Pearmain, Adams' Pearmain, American Mother, Beauty of Bath, Cockle Pippin, Cornish Aromatic, New Rock Pippin, Irish Peach, King of Tompkins' County, Lemon Pippin, Rosemary Russet, and Scarlet Nonpareil. *Culinary*: Annie Elizabeth, Beauty of Stoke, Bismarck, Bramley's Seedling, Grenadier, Hanwell Souring, Kentish Fillbasket, Lane's Prince Albert, Lord Derby, Lord Grosvenor, Peasgood's Nonsuch, Sandringham, The Queen, Striped Beefing, Schoolmaster, Hawthornden, and Newton Wonder. *A. B. Willis, Pudding Street Gardens, Sussex.*

NOTICES OF BOOKS.

'GRAPES, AND HOW TO GROW THEM.

THIS little book consists of 109 pages of text, but includes 32 useful illustrations. The work is conveniently arranged into 19 chapters. Mr. Sanders is responsible for an interesting introduction, dealing with the history of the Grape vine, and he has written several chapters in the book itself. The information given in these chapters, which include one on the "Doubts and Difficulties of Grape Culture," will prove very helpful to beginners in Grape-culture. In respect of the thinning of the fruit, we agree with the method of procedure described by the author, but not with the distance he recommends to be allowed between the berries retained to form the individual bunches. The author says (page 52), in explaining the process of thinning the bunches, that "The berry at the extreme point of the bunch should be left, and also those at the extreme points of the branchlets, but that all others should be cut away that are within half an inch of it," adding that "the berries on the top part of the bunch should be left as thick again, because they have so much more room to swell." We are somewhat reluctant to have to point out this direction as a weak point in the excellent cultural details so clearly indicated in the pages of this book. A space of $\frac{1}{2}$ inch is much too little to allow between the berries left to form the bunch in the process of thinning any variety of Grape, inasmuch as it does not afford sufficient space to admit of the development of the berries to a good average size. A minimum space of 1 inch should be allowed between the crown or central berries in the process of thinning the bunches of such varieties as Black Hamburgh, Mrs. Pearson, Lady Downes, Apple Towers, Lady Hutt, and Foster's Seedling, allowing a little more than 1 inch from berry to berry in thinning bunches of Madresfield Court borne by strong robust-growing canes. One inch and a quarter will be none too much space to allow between the berries in thinning bunches of Gros Maroc, Gros Colmar, and Black Alicante, seeing that the berries are capable of attaining to a large size when due space is allowed for their development without in any way interfering with the compactness of the individual bunches. Moreover, in the case of Madresfield Court, Gros Maroc, and Black Alicante, beyond the fact that the berries themselves are capable of growing to a large size,

the footstalks of the berries are short and stiff, and on that account require the more space to develop themselves. Bunches of the Gros Guillaume, Buckland Sweetwater, Mrs. Pince's Black Muscat, and Muscat of Alexandria seldom require to have more than the small berries cut out, as the bunches are somewhat loose in habit of growth, and the berries, being furnished with long footstalks, have ample room to swell to their proper dimensions. The berries on the top part of the individual bunches require very little thinning, simply because they are on the top. Mr. Sanders, in the last paragraph (page 12) of his *History of the Vine*, states that the heaviest bunch of Grapes of which he has any record was a bunch of Gros Guillaume grown at Charville, Tullamore, Ireland, by the late Mr. Roberts, and weighing 23lb. 7oz. We may point out, however, that two heavier bunches were grown in Scotland and exhibited in Edinburgh some 30 years ago by Mr. Curror, of Eskbank, Dalkeith, whose bunch of Trebbiana scaled 26lb. 4oz. Mr. Dickson, of Arkleton, Dumfriesshire, staged a bunch of the White Nice Grape, which weighed 25lb. 15oz., both bunches having been weighed at the show by the judges. The last 17 pages of *Grapes and How to Grow Them* consists of monthly calendars, in which useful reminders of work to be done during each month in the year are given in the most lucid manner. W.

VEGETABLES.

RARER KINDS WORTHY OF CULTIVATION.

IN many gardens there is a demand for a greater variety of vegetables, and especially is this so in severe winters, when the choice is restricted to what are termed common vegetables. At this season, if the supply of vegetables can be added to by increased varieties without resorting to forcing, there will be a gain. Forced vegetables are valuable, but the means are not always available for their forcing.

CELERYAC.—This is a delicious vegetable, but how seldom one sees it grown; indeed, I note that in one large seed grower's catalogue a line or two suffices for its notice, whereas pages are devoted to the kinds of many vegetables of lesser value. On the Continent this vegetable is in constant use from November to May, and is served cooked in several ways. It is excellent when cut up as is Beetroot, and eaten as a salad, whilst as a boiled vegetable it is equally good. The culture is quick and simple; in fact, it does not need so much attention as Celery. A deeply-dug, well-enriched soil should be selected for planting. A distance of 2 feet apart between the rows, and half that measurement between the roots will suffice. Plants raised from seeds sown in March or April in a frame, and afterwards planted out when large enough, will furnish good roots for winter use. All the side growths should be removed, and in the case of a light soil I advise planting in a deep drill as this will assist in keeping the roots moist. Deep trenches as in the case of Celery, are not required, and the plants, though nearly hardy, should, on a wet or heavy soil, be lifted late in the autumn and stored in a cool shed or store for winter use. As previously stated, the several varieties are not catalogued in this country, but there are at least half-a-dozen good kinds grown for the Paris market and some splendid roots are sent from France to Covent Garden. We cannot in this country grow roots of equal size and quality to those on the Continent. To obtain extra fine roots I have sown seed early in February in heat, pricked out the seedlings in boxes, and planted them in their permanent quarters

* By J. J. Fensholt, edited by J. W. Sanders. W. H. & L. Collingridge, 148 & 149, Abchurch-lane Street, London E.C. 4. Price one shilling.

early in May. This practice gives a long growing season, and the plants make fine roots. The Large Early is a very reliable variety, and other good kinds are Pine Apple and Large Knob.

SALSIFY.—This vegetable is quite different in flavour to any other, and may be classed as an excellent winter vegetable. It may be grown like the Carrot, and be kept in a good condition till May by storing in a cool, frost-proof shed. The varieties are not numerous. The one known as Sutton's Giant is a much superior root to the old common form. This vegetable is grown on the Continent under various names. A large, fleshy, thick-rooted variety is much superior to the forked, smaller-rooted ones. Salsify seed should not be sown very early, as early-sown plants, especially in light soils, have a tendency to "bolt." I prefer May sowings if the roots are intended for keeping; indeed, I have mostly made two sowings in the south, the one for autumn and the other for use after Christmas. I have alluded to the distinct flavour of this vegetable, and on this account it is valuable, but its importance lies in giving variety at a season of the year when choice is limited.

SCORZONERA.—This root also is well worth including in a list of winter vegetables. In growth it is somewhat like Salsify, but the long roots are black. The same culture is required, and much the same remarks apply as to flavour as in the case of Salsify. The large Russian variety is the best, and greatly superior to the ordinary type.

CARDOUS.—This is a green vegetable, and its culture requires more labour than the roots above cited, but the plant is worthy of trial. Grown for an autumn supply, it furnishes a good return, and is a distinct vegetable when cooked. The plant closely resembles the Globe Artichoke, but the leaf portion is the edible part, and this requires blanching. Seeds sown under glass similar to those of Celery, and the seedlings planted out in trenches in rich soil in May, will make excellent plants. A supply of this vegetable may be had for winter use by sowing seed in trenches 3 feet apart in May, and thinning the seedlings afterwards to 18 inches. An abundance of moisture is required in dry weather, and liquid manure is very beneficial. The blanching is best done in September or October. The plants, if lifted late in November, can be kept in a good condition for some weeks if placed in a cellar or root store.

SPINACH BEETS.—In many gardens the ordinary varieties of Spinach frequently fail, especially if the situation is very moist. The Perpetual or Spinach Beet is a good substitute, as this plant is not readily affected by climatic changes. Seeds sown in April will afford the means of raising an early supply and a June sowing a winter one. It is necessary, in order to obtain strong plants, that ample room be given; not less than 18 inches between the rows and half that distance between the plants. A supply of this vegetable may be easily maintained until the spring-sown Spinach is available. *G. Wythes.*

The Week's Work.

THE FLOWER GARDEN.

By A. C. DALLIET, Gardener to Mrs. Jones, Pinner, Cornwall.

Border Chrysanthemums. Remove the old flower stems from all the varieties which have finished flowering, and afford the standard kinds a mulching or a layer of ashes around their crowns as a protection against cold weather. A few plants of each variety should be lifted and planted in a cold frame or pit. Some surplus plants of the large-flowered variety which were planted here at the foot of an

old wall and in vacant places in the borders have been most useful. These plants were not disbudded and required little attention beyond staking and an occasional watering. There is now a large selection of early-flowering varieties, but such old favourites as Mme. C. Desgrange, George Wermig, Market Pink, October Yellow, and Roi des Précoces should not be discarded. The single-flowered Ladysmith makes a capital border variety.

Hedge Briars. Briars for budding purposes should now be collected. These must be selected with judgment or many will be found to be of little use. When trimming their roots, remove only the stump roots and retain as many fibrous roots as possible. The dwarf stocks may be planted together in a nursery bed, but it will be better to plant any tall Briars in their permanent quarters.

Planting under trees.—Now that most of the leaves have fallen from the deciduous trees, the bare spaces under them becomes more in evidence. Where the shade is dense, grass fails to grow, and even special mixtures of grasses only answer for a short time. Under many Conifers it is almost impossible to induce anything to maintain a healthy appearance, and Ivy, which may be looked upon as a last resource under most trees, becomes drawn and sickly. Under these conditions one can only plant outside the radius of the tree so as to hide the bare place behind. In such cases there is a wide range of material from which to select, but whatever is employed should be kept so pruned that they do not grow up into the trees. With such trees, deciduous or evergreen, as permit a moderate amount of light to penetrate through their branches, a fair measure of success may be assured. The soil around the tree should be broken up as much as possible without injuring the roots of the tree. If at all dry, apply a thorough watering, then add a goodly quantity of fresh soil so that the shrubs to be planted may have plenty of nourishment. After planting, tie securely those plants which are likely to be disturbed by the draughts which are common to such places, and water the ground thoroughly. For some weeks after the planting has been done, time should be spared to syringe the shrubs on dry days. The best kinds of plant to be used will depend largely on the district and the density of the shade: evergreens of as dwarf a character as possible should largely predominate. The following and many others of a like character are very suitable:—Ivies, *Andromeda Catesbaei*, *Gaultheria Shallon*, *G. procumbens*, *Ruscus aculeatus*, *R. hypophyllum*, *R. h. var. hypoglossum*, *Hypericum calycinum*, *Ulex europæus*, *U. nana*, *Vincas*, *Euonymus*, *Vaccinium Vitis-Idæa*, Sweet Briar, and many species of *Rosa*. The Hart's Tongue Fern grows freely under shade if planted in a light soil, and many bulbous plants, such as the *Celcicums*, *Lily of the Valley*, the hardy *Cyclamens*, &c., may also be planted.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to L. THOMSON PATON, Esq., Norwich, Norfolk, and elsewhere.

Late Grapes, such as Lady Downer, Black Alicante, and Gros Colmar, still hanging on the vines, will require to be examined carefully and regularly for the purpose of removing any decaying berries, which, if allowed to remain, would quickly cause other berries to decay also. This is the worst season of the year for keeping Grapes. Gather all decayed leaves as soon as they fall from the vines; admit abundance of air throughout the day during favourable weather, and leave the top ventilator just a little open during the night, except when there is frost. Turn a little heat into the water pipes at sunset just to expel damp. Keep the atmosphere of the house as dry and yet as cool as possible; its temperature should never exceed 45° at night. Do not permit any plants that require root waterings to remain in ainery where ripe Grapes are hanging, as the watering of such plants would cause much damp in the house.

Pruning vines.—Vines that have shed their leaves, and from which all the fruit has been cut, may be pruned after the houses have been thoroughly washed with hot water and soft soap, and the wood-work painted if necessary. The

walls should be lime-washed with a wash made by mixing 4 lb. of hot lime, 1 lb. of flowers of sulphur, and 2 gallons of water. Stir this mixture well whilst using it. It is necessary, sometimes, to reserve this work for wet or otherwise inclement weather, as then the outside staff may be comfortably employed during such weather. Wash and dress the vines with the Gishurst Compound, especially if red spider has been prevalent. Remove the surface soil of the inside border down to the roots, and replace this with well-chopped turfy loam. To each barrow-load of loam add a 6-inch pottful of a fine-grade vine manure. Work in this top-dressing among the surface roots, and make all firm as the work proceeds. The borders should be tested, and if the soil is found to be dry apply a moderate watering, which will suffice until the time arrives for starting the vines into growth.

Young vines will now have finished their growth, and will require fire heat with air to assist in properly maturing the wood before the end of the year, after which time the young canes should be pruned back to the bottom of the rafter.

Tomatoes.—The winter crop should now be mostly set, it being almost impossible to induce Tomatoes to flower in winter. Be careful with the watering of the plants, and more especially if they are planted into borders. Pot culture is preferable during winter. Apply a little ventilation daily and sufficient fire-heat to maintain a warm, dry atmosphere. The average winter atmospheric temperatures for Tomatoes in the day time should be, maximum 70°, minimum 65°, and at night 60°. Rub out all side growths as they appear, and keep a sharp lookout for white fly, fumigating lightly if this pest is discovered. Young plants for potting in early spring now in 3-inch pots should be wintered near to the glass in an intermediate house or a coolinery. Exercise care in applying root-waterings.

THE KITCHEN GARDEN.

By WILLIAM H. HONISS, Gardener to C. COMBE, Esq., Cobham Park, Surrey.

Forcing Asparagus.—Although the crowns, owing to the abnormal season, have not enjoyed a long period of rest, their lifting for forcing should be no longer delayed. It was noticed in digging up some of these plants a few days ago that new growths 3 inches in length were present: with a view of checking this premature growth, it will be advisable to lift the roots some 10 days or a fortnight previous to their being introduced into heat for forcing, and litter should be placed about them when they are lifted to protect them from the drying influences of wind and air, which are very injurious to Asparagus roots.

Permanent beds of Asparagus that have been made tidy should receive a good dressing of manure as soon as a favourable opportunity occurs to permit of the manure being wheeled on to the beds. By applying this dressing now, the manurial properties will get washed down into the ground before spring arrives.

Tillage.—Digging and other ground work will now be in full operation, and I once more advise that, during the time this work is in progress, the sites of next season's crops be considered, for if this work is planned now, much labour and manuring will be saved. Some crops require considerably more manure than others, and ground that was heavily manured last season might, with a suitable change of crop, answer without any this season. It is good practice to plant roots such as Salsify, Beet, &c., on land that was previously occupied by Celery, or on ground that was well trenched for Peas last winter. By a systematic rotation of crops, arranged for at this period of the year, the best results are obtained, and much time is saved during the busy months of spring. A general survey should also be made of the various crops of the entire garden, with a view of improving the selection of varieties, and with the object of deciding the cause of any indifferent results and failures.

Hot-beds.—Continue to collect litter for the making of hot-beds for protecting Celery, &c., during sharp frosts. The material should be as dry as possible, and not be allowed to lie on the tops of the Celery longer than is absolutely necessary, as its presence will, in a short time, cause damping.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq.,
East-west, Lark, Kent.

Perpetual-flowering Carnations.—The main batch is now at its best, and to enable the blooms to last in good condition as long as possible, care should be taken to prevent the atmosphere of the house from becoming very damp. The temperature at night should range between 45° and 50°, according to the conditions prevailing out-of-doors. A little ventilation should be allowed all the night unless there is severe frost. Each morning increase the amount of ventilation as the heat in the house increases, until the atmospheric temperature is 55°, when the ventilators may be opened to the full. Watering should be done as early in the day as possible. These newer varieties appear to be very susceptible to the fungous diseases, more especially if kept in too warm an atmosphere, but if every particle of diseased foliage is cut off and burnt as soon as seen, I believe either disease may soon be eradicated. At this season of the year when the space available under glass is more than usually valuable, it is often difficult to obtain the most suitable degree of heat for the various plants, and this knowledge may have deterred some from growing winter-blooming Carnations. However, if no other house is available for these plants, then the houses in which fruit trees are resting will suit them admirably. The flowers may be long in opening, but less heat than I have recommended above is to be preferred, at this season, to excessive heat which would soon cause the plants to become enfeebled. Amongst the many varieties at present on the market and in cultivation here, Fair Maid is specially satisfactory both for the freedom with which its beautiful pink flowers are produced on long, stiff stems, and also for the lasting qualities of the flowers in a cut state. Lady Bountiful is still one of the best for its purity, quality of bloom and freedom, and for its free-flowering habit, but White Perfection and White Lawson yield blooms that are rather heavier and are worth cultivation. Lord Rosebery is a fine, dark crimson, producing very large flowers, but is not nearly so free in flowering as Harlowarden, which, of its colour, I have found to be the best. Crusader is a very good scarlet flower, and identical in colour with Britannia, but it flowers later than that variety. Reliance, which improves on further acquaintance, is now giving good blooms with very sturdy growths. Mrs. H. Burnett is a lovely shade of salmon-pink. T. W. Lawson is still very useful, also the white Mrs. S. J. Brooks which, though not so large in bloom as most of the varieties mentioned, is well worth growing for the great quantity of good-shaped flowers produced of a size very suitable for "button-holes." Nelson Fisher seems rather a weak grower, but the blooms are beautiful. Hannah Hobart is the largest of its colour that I have grown so far, the flowers being also of good shape. Royalty (pink) is free-flowering, but the blooms are small. Countess Lytton, of the same shade as Mrs. L. Rothschild, is improving, the flowers being of especially good form. These, with Enchantress, of similar tint to the old blush "Maison," make up a fairly representative collection. Winsor, Aristocrat, Elliot's Queen, and a few other varieties I have not grown long enough to speak of their qualities with certainty.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence,
Bart., Burford, Surrey.

Pleiones.—The Indian *Pleiones*, if well grown, form valuable decorative plants, and are capable of furnishing pretty flowers that are suitable for "button-holes." Such varieties as *P. concolor*, *P. maculata*, *P. lagenaria*, *P. præcox*, and *P. Wallichiana* are now passing out of bloom, and it will be noticed that the parts from which the flowers have sprung are in reality the new pseudo-bulbs, which are, at present, very small, and scarcely formed. At the base of these young bulbs numerous small white roots will very quickly show themselves, and it is at this stage that the plants should be turned out of the old soil and afforded fresh-rooting material. Shallow pans are very convenient receptacles in which to cultivate *Pleiones*, being easily suspended. Pans having a diameter of 8 inches or 10 inches, and therefore capable of holding from 15 to 20 of the largest pseudo-bulbs, are most

suitable. Drain the pans to about half their depth with clean crocks, placing them very carefully in position, for the plants, requiring large quantities of water when in full growth, it is necessary that any excess should be able to pass freely away. The compost should consist of fibrous loam, peat, and chopped sphagnum-moss in equal parts, adding some finely-broken crocks and coarse silver sand, and mixing all the ingredients well together; keep the centre pseudo-bulbs well raised, gradually sloping the others down towards the edge of the pan. Make the compost rather firm, and when the operation is finished place the pan containing the pseudo-bulbs near to the roof glass at the coolest and best ventilated part of the *Cattleya* or intermediate house. Apply water sparingly until the young growths are well advanced, and as roots become plentiful, and the leaves commence to expand, so must the quantity of water be increased. When the plants have become established, they may be syringed overhead occasionally, and the usual waterings may be supplemented with applications of weak manure water, afforded about once each week. The cooler-growing *Pleiones* as *P. humilis* and *P. Hookeriana* have completed their growth, and will hereafter require only just sufficient water to prevent the pseudo-bulbs from shrivelling. Suspend the pans in the lightest position available in the *Odontoglossum* house. The plants should flower in February.

Trichopileas.—Such species as *T. suavis*, *T. coccinea*, *T. tortile*, *T. rostrata*, *T. crispa*, and *T. lepidia* having completed their growths will not require so much water at the root as formerly, or their leaves will become spotted. A cool, intermediate atmosphere will suit them, but plants of *T. suavis*, which are now producing their flower-spikes, should be placed in the warmer atmosphere of the *Cattleya* house. *Trichopilea fragrans*, variety *nobilis*, often called *Pilumna nobilis*, is now flowering; it is one of the best of white, sweet-scented Orchids. Keep this plant in a somewhat shady position at all times, as its leaves are apt to turn yellow if exposed to much sunshine. After the plants have flowered, be careful not to afford the roots too much water. Repotting may be done in February.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to Lord Clifton, Breton,
East Devon.

Pruning (continued).—Red and White Currants should have the side shoots cut back to within $\frac{1}{2}$ inch of their origin, leaving 6 inches of new growth on the main branches if extension is deemed necessary. The finest fruits of Black Currants are produced on wood of the previous year's development, and in their case a few of the best located basal growths should be left to take the place of old and exhausted branches. Any young shoots of an undue length should be stopped, others not required be entirely removed, and the lateral growths on the main branches spurred back. There are two recognised systems of pruning the Gooseberry. The old practice of spurring back those shoots made during the preceding summer has fallen into disuse. The newer practice is to retain entire any shoots needed to form a well-balanced bush, shortening those that exceed 15 inches in length, and entirely removing any old branches that are not required for furnishing the bush. Even in this case some of the shoots must be cut well back to allow of the fruits being conveniently gathered. In gardens where birds pick out the buds of Gooseberries and Currants, the bushes should be syringed two or three times during the winter, either with Bentley's liquid preparation or some other distasteful ingredient. Choose a fine day for the spraying.

Figs.—In gardens where severe frosts prevail, the branches should be unfastened from the wall, and be tied in convenient bundles so that they can be quickly protected with bands of hay, straw, or bracken.

The fruit room.—Afford a little ventilation daily, unless the weather is wet or foggy. Examine Apples and Pears frequently, as a decayed fruit quickly infects its neighbour. Cox's Orange Pippin and King of the Pippins are now in condition for the table, and amongst the newer varieties of Apples now in season are: Allington Pippin, Charles Ross, The Houghlon and Rival. Most of the better varieties of Pear-

unfortunately ripen before the New Year arrives, and even those varieties catalogued as ripe in December are often past their best condition by the middle of November. Amongst the best late-ripening Pears are *Champion de Series*, *Zéphirin d'Herbigny*, *President Barabé*, and *Le Lectier*.

Good weather.—From November 8 to November 22, very little rain has fallen in this locality, thus the planting of nut trees and bushes has been uninterrupted. On cold, heavy soils planting during November is almost an impossibility, and unless it can be done quite early in November, planting should be postponed until about the first week in February. See that all purchased trees are correctly labelled before the nurserymen's names become obliterated. As opportunity offers, continue the destruction of American blight on Apple trees by the use of methylated spirit or Gishurst compound, which, with a later winter spraying of caustic wash, should rid the trees of this pest.

PUBLIC PARKS AND GARDENS.

By W. W. PETERBREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

The "Unemployed".—With the advent of winter, park superintendents in many cities are faced with the possibility of having to find work for the unemployed. When the unemployed are engaged upon any work connected with parks, it generally means that the officers in charge have to put up with a considerable amount of worry and anxiety in addition to much extra work, for which the return is very small. The same work, if undertaken by ordinary picked workmen, would invariably be more efficiently carried out than when performed by the unemployed, and probably at half the cost. Those who have had any lengthened experience of the "unemployed" are too well aware of the fact that, however deserving of sympathy they may be, the greater number of them are often totally unfit, either from the lack of experience or on account of physical debility, to accomplish a good day's work. When it is remembered that in times of distress, tailors, shoemakers, factory hands, all classes of casual labour, and even the ubiquitous "corner boy," form part of the unemployed, it will not be wondered at that the work is of poor quality and the troubles of the officials great.

A redeeming feature.—From the superintendent's standpoint, there is but one advantage in utilising the services of the unemployed. It is that he is sometimes enabled to get work undertaken upon their account which would otherwise be impossible, as requiring too much expenditure. When a grant of money is made—as it was in some cities almost annually prior to the passing of the "Unemployed Act"—for the purposes of providing labour for men out of employment, it is sometimes easy, by showing that certain work lends itself to the purpose, to get it carried out free of charge to the department. Even when the parks are debited with such expenditure, no one finds fault, as the money was spent, not so much in the interest of the parks as for the benefit of the "unemployed."

Value of discipline.—The most satisfactory method of dealing with this class of workmen is to make them feel that they are not intended to be the recipients of charity, but must earn the money they receive, and that if they do not try to do so, then you will dispense with their services. The best piece of work I have known done by the "unemployed" was carried out under such conditions, although when they were first started there was a little difficulty in getting them to understand that it was not simply a matter of putting in so many hours a day with wages assured to them, but that it was really "work" that was expected. After a few loafers had been severely dealt with, this fact was fully recognised, with the result that the majority worked to the best of their ability. It is always a good plan for park officials to keep in view certain special work that, if necessary, could be undertaken by the "unemployed." The cleaning out or forming of ponds, filling up and softening uneven parts of recreation grounds, turning over and preparing ground for tree-planting, forming and ballasting carriageways or footpaths, are matters which, under suitable supervision, may be more or less successfully carried out by men selected from among the "unemployed."

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.

Appointments for December.

TUESDAY, DECEMBER 3—
Scottish Hort. Assoc. meet. Nat. Amateur Gard. Assoc. meet.

WEDNESDAY, DECEMBER 4—
Nat. Chrys. Soc. Exh. at Crystal Palace (2 days).

SATURDAY, DECEMBER 7—
Soc. Franç. d'Hort. de Londres meet. German Gard. Soc. meet.

MONDAY, DECEMBER 9—
United Ben. & Prov. Soc. Coms. meet.

TUESDAY, DECEMBER 10—Roy. Hort. Soc. coms. meet.

WEDNESDAY, DECEMBER 11—
Winter Flowering Carnation Soc. Exh. in Regent's Park.

THURSDAY, DECEMBER 12—
National Rose Society's Annual meet. and Dinner at Hotel Windsor.

SATURDAY, DECEMBER 21—German Gard. Soc. meet.

WEDNESDAY, DECEMBER 25—
Christmas Day (Quarter Day).

THURSDAY, DECEMBER 26—Bank Holiday.

FRIDAY, DECEMBER 27—Roy. Bot. Soc. meet.

TUESDAY, DECEMBER 31—
Roy. Hort. Soc. Coms. meet. Brit. Gard. Assoc. Ex. Council meet.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—40° 9'.

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, November 27 (6 P.M.): Max. 53°, Min. 49°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, November 28 (10 A.M.): Bar., 29.7; Temp., 52°; Weather—Overcast.

PROVINCES.—Wednesday, November 27 (6 P.M.): Max. 51°, England S.; Min. 38°, Scotland N.E. Coast.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—
Sale of Dutch Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY TO FRIDAY—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

MONDAY AND FRIDAY—
Roses, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.30.

TUESDAY—
Unreserved Clearance Sale of the whole of the Stock and Utensils in Trade at The Nurseries, Coburg Road, Upper Teddington, by Protheroe & Morris, at 11.

WEDNESDAY—
Roses, at 1.30; Palms, Azaleas, and Plants, at 5, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

THURSDAY—
Sale of Nursery Stock at Bury Road Nurseries, Gosport, by Protheroe & Morris, at 12.

FRIDAY—
Orchids in variety, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Late-blooming Roses.

During the next few months, when planting operations of all descriptions may be carried out with results more or less satisfactory, it will be well to reflect upon the degree of usefulness exhibited by particular varieties of Roses during the past season.

There can be no question that the Roses which are of the greatest value for garden cultivation are those which are capable of

flowering both early and late in the season. There are many varieties invaluable for exhibition which are by no means remarkable for the production of what are generally termed "autumnal" flowers. Marchioness of Londonderry, for example, as a general rule only blooms once during the season, and usually as late as the end of July. On the contrary, such fine Hybrid Perpetuals as Captain Hayward and A. K. Williams, which as a rule come early into flower, are sometimes found producing blooms of great beauty at the commencement of November. On November 9 we had the pleasure of gathering a bouquet of Roses from such excellent varieties as Margaret Dickson, Clio, Hermosa, Madame Pernet Ducher, Papa Gontier, and Viscountess Folkestone, the flowers being almost as bright and beautiful as those which developed in the middle of July. What was even more gratifying was the fact that they still retained their fragrance at this cold and sunless season of the year. The China Roses are especially valuable for the production of late autumnal blooms, and particularly that well-known variety termed the Monthly Rose. Heroic it undoubtedly is, for frost alone can check its marvellous perpetuity. This variety may occasionally be seen flowering with the greatest equanimity even on the approach of December. Laurette Messimy, raised by M. Guillot in 1887, and hardly since excelled for distinctive beauty, is also very floriferous quite late in the year. An extremely charming hybrid between the China and Tea sections having similar qualities is Enchantress, which, when sent out in the year 1896 by Messrs. Wm. Paul and Son, was hailed by Rosarians as the first of a new and very fascinating race. Of the many varieties of recent origin which flower freely in late autumn, one of the loveliest is Warrior, which, however, loses considerably its dark crimson colour in October, and then reverts to something of the normal complexion of its probable parent, Papa Gontier, which it strikingly resembles in its growth and characteristics. Of the older Tea Roses, a supreme favourite is the cream-coloured Devoniensis. The blooms are much smaller, and perhaps a little less fragrant in October than in July, but they are hardly less beautiful. It is sometimes said that Devoniensis is exceedingly difficult to grow, but this has not been borne out by our own experience. The lovely hybrid Noisette variety Madame Alfred Carrière is usually only a summer flowering variety, but in some gardens it flowers also in late autumn.

Many of the finest Roses have continued to produce their flower-buds this season after the climatic conditions had become unsuitable for their successful development. Such a Rose as the magnificent Frau Karl Druschki, for example, cannot open its petals with much facility amid the cheerless conditions prevalent at the commencement of November; the flower-buds in such cases are pictures of hope impossible of fruition.

OUR SUPPLEMENTARY ILLUSTRATION to the present issue represents what is probably the most gorgeous species of Eucalyptus in cultivation. *Eucalyptus ficifolia* is a native of West Australia, and, in some botanical features connected with the fruit and foliage, is most closely allied to *E. calophylla*. The species was originally described by the late Baron Sir F. MUELLER, in his *Fragmenta*, Vol. II., p. 85. For garden pur-

poses the unique value of this species consists in the scarlet flowers, which are showy to the highest degree. The late Baron Sir F. MUELLER has described it as flowering at the end of January and beginning of February in its native country, "when the flowers diffuse a rich, red hue over the dark green foliage of the landscape." The tree is said to grow to a moderate size as compared with other species; the handsome leaves are often 6 inches in length. Our illustration has been reproduced from a sketch prepared by Mr. WORTHINGTON SMITH, from specimens exhibited at a meeting of the Royal Horticultural Society in August last by W. NORTH ROW, Esq., Cove House, Tiverton, Devonshire, with whom the species flowered in the open garden. The species is cultivated in the Temperate House, Royal Gardens, Kew, but has not flowered there. It has flowered many times in the month of August in a cool Palm house in the gardens of Mrs. FITZROY FLETCHER, of Letham Grove, Arbroath, N.B., and commenced to flower when only seven years old, the plant having been raised from seeds received direct from Australia. A figure prepared from specimens obtained from Mrs. FLETCHER's garden was published in the *Botanical Magazine*, tab. 7697. We reproduce a figure of the fruit of *Eucalyptus ficifolia* which was published in these pages, together with illustrations of fruits of several other species, on October 13, 1883.

LINNEAN SOCIETY.—A meeting will be held on Thursday, December 5, at 8 p.m., when the following papers will be read:—Professor J. ARTHUR THOMSON, "Report on Alcyonaria of the Sudanese Red Sea"; Mr. H. C. CHADWICK, "Report on the Crinoidea of the Sudanese Red Sea"; Prof. R. J. HARVEY GIBSON, M.A., F.L.S., "Notes on Some Marine Algæ from the Red Sea." Exhibitions:—Dr. OTTO STAFF, F.L.S., specimens of *Spartina Townsendii*, as illustrating its distribution in Britain; W. A. P. YOUNG, F.L.S., lantern slides, showing stages of soil-denudation consequent on the removal of forests.

NATIONAL ROSE SOCIETY.—The annual general meeting of the National Rose Society will be held at the Westminster Palace Hotel, Victoria Street, S.W., on Thursday, December 12, at 3.30 p.m. This dinner will be followed at 6 p.m. by the annual dinner of the Society, which will take place at the Hotel Windsor, Victoria Street, S.W. Mrs. HOLE and her son, Mr. HUGH HOLE, have promised to attend the dinner. *Edward Masley, Hon. Secretary.*

PRESENTATION TO A NURSERY MANAGER.—Mr. A. MICHIE, who has occupied the position of acting manager to the firm of Messrs. LAING and MATHER, nurserymen, Kelso, for a period of about 20 years, has started in business for himself at Alnwick. On his leaving Kelso, Mr. MICHIE was presented with a purse of gold from the temperance and religious workers of the town.

BELGIAN HORTICULTURE.—We are glad to see that our contemporary *La Tribune Horticole* has resumed publication after the brief interruption caused by a strike on the part of the operatives. The new number, containing three weeks' issue, contains an open letter addressed to the Government of Belgium, urging that steps may be taken to ensure the more direct representation on the Government of the interests of horticulture. It is pointed out that, from a national point of view, the importance of horticulture is rapidly increasing; and it is suggested that it is, officially, very inadequately represented at the present time, seeing that the Ministry of Agriculture is already overburdened with other duties.



EUCALYPTUS FICIFOLIA AS IT FLOWERED OUT-OF-DOORS AT COVE HOUSE, TIVERTON, DEVON.
CALYX GREEN, SLIGHTLY TINGED WITH RED ; FILAMENTS OF
STAMENS SCARLET ; ANTHERS DEEP RED.

PRESENTATION TO A GARDENER.—To mark the attainment of his silver wedding and his twentieth year in the family's employment, Mr. J. PENTLAND, Ashwicke Hall Gardens, Marshfield, Chippenham, has just received from his employer, C. H. B. FIRTH, Esq., a silver tea-service. Mr. PENTLAND, it will be remembered, contributed our weekly Calendar on "The Kitchen Garden" in 1904.

THE KEW GUILD JOURNALS.—We are requested by Mr. W. N. WINN, Royal Botanic Gardens, Kew, and secretary of the Kew Guild, to state that he wishes to obtain copies of the Journal for 1893, and would be glad to hear from anyone who has a copy or copies to spare.

MEMORIAL TREES AT INGESTRE AND ALTON TOWERS.—During the King's recent visit to Ingestre and Alton Towers his Majesty planted two young Cedar trees (*Cedrus atlantica*), one at Ingestre and the other at Alton Towers. The silver spade was handed to his Majesty by Mr. E. GILMAN, head gardener.

MAQUI BERRIES.—Under this name the small fruits of *Aristotelia Maqui*, L'Herit. (N. O. Tiliaceae), have recently been offered at the London drug sales. For the last 20 years these berries have been imported into France and Chili, and are used for colouring wines. The fruits, as imported, are about the size of Black Pepper, and, like those of *Rhamnus cathartica*, show four segments, each containing a triangular seed. Except that they exhibit no trace of an adherent calyx, they might easily be mistaken for Buckthorn berries. If wetted and rubbed on paper they give an immediate purple stain resembling Burgundy wine in colour. In France they have taken the place of Elderberries, which were formerly used in colouring wines. In 1884 France imported 500 kilos.; in 1886, 115,600 kilos.; and in 1887, 315,705 kilos. *E. M. Holmes*, in the *Pharmaceutical Journal*, November 16.

TRINIDAD'S FRUIT TREES.—According to a paragraph in the last number of the *Agricultural News* of Barbados, the fruit trade of Trinidad is in a decidedly progressive condition. As many as 10,000 bunches of Bananas, it is stated, are shipped to England every fortnight. Although on the estates of one proprietor in Naparima, Bananas have begun to displace sugar cultivation, yet it is not thought at all likely that such a change will become general. Indeed, it is said not to be wished that sugar should be so displaced, as the new crop would not require anything like the same amount of labour as the present standard crop of the island, nor would it be the means of putting so much money into circulation. With the sugar industry of Trinidad still prosperous, however, there is at the same time abundant room for a subsidiary, but also prosperous, Banana industry, and one, moreover, specially adapted for small cultivators. Nevertheless, there is a growing demand in the island for Banana suckers, which are being planted in considerable quantity on Cacao and sugar estates. There is a large trade also being done in Oranges and Limes.

RURAL EDUCATION IN FRANCE.—It is not only in England that the constant flow of population from the country to the towns excites the apprehension of those who have the welfare of the race at heart. In France the same trouble exists, and the matter has recently been studied with a view of finding a cure, by M. L. HENRY. As the result of a full investigation into what is being done in other countries, he urges the foundation by the State of schools in which the girls shall be taught the principles of

rural economy in the widest sense. Criticising this suggestion, M. CONDRY, writing in the *Journal de la Société Nationale d'Horticulture de France*, states that it is the boys and young men of the rural districts who want this instruction, pointing out that conscription necessarily removes all the male population to urban centres for a part of their life, and that it is therefore essential to exert a counter influence against the attraction of the town. No doubt there is much in the argument, and it is a comforting reflection that in a matter of this sort we are not behind our neighbours. The instruction in rural matters given under the auspices of the County Councils in the country districts, added to the wise policy of encouraging gardening, &c., which the Board of Education has introduced into the elementary schools, shows that England is at least alive to, and is trying to grapple with one of the serious problems of the present age.

HOT WATER AND SEED GERMINATION.—It is well known that many seeds germinate more quickly if they are soaked in warm water before they are sown. M. E. DRAPS-DOM, writing in the *Tribune Horticole*, mentions that he obtained remarkable success with some refractory Palm seeds by keeping them for some hours in hot water—so hot, indeed, as to be almost boiling.



FIG 154. FRUIT OF EUCALYPTUS FICIFOLIA.
(See also Supplementary Illustration.)

Thus a large sowing of 10,000 *Latania* seeds germinated very evenly 14 days after sowing. It is not likely that seeds would stand this treatment unless they fulfilled two conditions, viz., they must be dry to start with, and water under any circumstances must only penetrate them slowly. For anything like the temperature of boiling water would, of course, kill the embryo if its cells contained any moisture, whilst it is known that dry seeds can withstand a temperature (as long as their living cells remain dry) even higher than that of boiling water.

RUST ON HOLLYHOCKS.—This disease has been assigned to various causes, but not until lately have I become convinced beyond a doubt that there exists a remedy for the disease. This remedy consists in the main of what is known as sulpho-naphthol, which is a liquid. A tablespoonful of this liquid is put into an ordinary pailful—or nearly so—of water, and then the water agitated, after which the plants affected should be sprayed with this emulsion. More than one application may be required for a complete cure, but cure eventually it will. *D. M.*, in the *Florists' Exchange*, November 2.

Publications Received. *Punch Almanack for 1908.*—*Trees and Their Stories*, by Percy Groom, illustrated by photographs by Henry Irving (Cassell & Co. Ltd.)—*Studies in Plant and Organic Chemistry, and Literary Papers*, by Helen Abbott Michael (The Riverside Press, Cambridge, Massachusetts).

CHRYSANTHEMUM NOTES.

ANEMONE-FLOWERED VARIETIES.

ALTHOUGH these do not occupy so prominent a position at the exhibitions as formerly, there are still many varieties to be found in the displays at the London Parks. Descartes is one of the grandest, and its rich vinous-crimson colouring is always most striking in mixed groups. It is a back-row plant, but one that is seen in each collection. Delaware is white and yellow, John Bunyan (pure yellow), Junon (lilac-mauve self), Le Chalonnais, M. Charles Lebocqz, and Prince of Anemones, are well in evidence at Victoria Park. In the conservatory at Finsbury Park there is a nice little group of "Anemones," the best of which, at the time of writing, are Grande Alveole, Sir Walter Raleigh, Owen's Perfection, Mrs. Judge Benedict, and several of the others previously mentioned. It would be a pity to see these old-time favourites pass out of existence in these days when the Japanese flowers threaten to extinguish everything that has not the mere property of size. *C. H. P.*

NEW FRENCH VARIETIES.

MANY novelties were staged and certificated at the recent Paris Show. I have, however, taken no account of the awards made by the French Floral Committee, but in regard to the following notes, the blooms have been judged on their merits solely from an English point of view. I know nothing of the habit and growth of the plants. The following are my selection of the 1908 novelties from the principal French growers, viz.:—

Victoire (De Pins).—A very large Japanese flower, after the style of *Le Colosse* Grenoblois. The flower is very full and double, of pale lilac-mauve, shaded with pink, the reverse being silvery.

M. J. Barat (De Pins).—A very full and double Japanese flower, of deep build and having rather broad florets. The colour is rich rosy-purple, with silvery reverse.

Le tour d'Argent (De Pins).—A very globular-shaped, pure white Japanese flower, compact and close in build.

Mlle. Lenoble (Liger Ligneau).—A perfect form of Japanese; flower spreading and beautifully shaded with rosy-purple, having a golden-coloured reverse. One of the most delicately coloured novelties of the season.

Le Capitole (Calvat).—A Japanese Incurved flower, with very narrow, grooved florets, but a compact, deep flower. Colour, deep golden yellow, shaded with bronze.

Vice-Consul Lewin (Calvat).—Japanese; not unlike a pale coloured Mrs. W. Wells, in colour being of a rather paler shade of warm, golden terra-cotta.

Comte Grandence Torrielli (Calvat).—A large Japanese, having narrow florets that build up into a big, compact flower. Colour, golden yellow, shaded outside with purple.

François Marchand (Calvat).—A Reflexing Japanese of excellent form, but having rather narrow florets. Colour, rosy-crimson shaded with yellow.

Souvenir de Vindrac (De Pins).—A Japanese Incurved variety, with broad, grooved florets; a big, solid-looking flower of rosy-crimson colour; reverse, straw colour.

Vicomtesse de Chantreaux (De Pins).—Another large Japanese flower, with grooved, incurving florets, very solid and deep in build. A full and double flower. Colour, deep golden-orange tinted with bronze.

Genl. Drude (De Pins).—Large blooms of the Japanese type. Colour, an effective shade of reddish-crimson; the florets are rather broad, and on the reverse side, golden-yellow.

Pic de Pajolle (De Pins).—A noble, solid-looking flower, incurving in form. The florets are deeply grooved, close and compact in build. Colour, rosy-crimson, with straw-coloured reverse.

Mme. Nathalie Langlé (Calvat).—A large, blush-coloured Japanese flower of great size and substance, very full and double, and possessing good florets.

Marthe Randet (Calvat).—A very big Japanese incurving flower, with medium-sized florets, which are deeply grooved. Colour, creamy-white.

LATE PROPAGATION UNDESIRABLE.

I HAVE always advocated the early propagation of the Chrysanthemum when large exhibition blooms are desired. Too many instances have been obvious again this season in which late propagation has caused failure in obtaining blooms of even moderate quality. There are exceptions to every rule, and I know that some flowers of first-class quality have been produced from cuttings which were inserted as late as the first week in March. For instance, Lady Talbot has given extra fine blooms from plants upon which the first bud that formed was "taken." When, however, we look upon the utilitarian side of the question, I cannot agree that one bloom to a plant in any way compensation for nine months' labour; even if no accident should happen to the particular flower. I see no reason why every plant should not produce three good flowers, excepting, of course, for an occasional disaster to a shoot or bud or an irregularly developed blossom which no one can guard against with absolute certainty.

The Chrysanthemum requires a long season of steady growth in a cool atmosphere where the growths thus produced have the best possible chance of becoming solid through the gradual and continual maturation of the tissues of the plants. The wood of late-rooted plants never ripens thoroughly, and this is a decided disadvantage; the blooms resulting from such culture may be large in diameter, but they lack the solidity and "build" which is so desirable in close competition; the florets, too, are wanting in fullness and lustre of colour.

Another objection to late propagation is the space required to preserve the old plants for the production of cuttings for two months longer than is necessary when early propagation is adopted, as the space required for the cuttings is obviously much less than is needed for accommodating the old plants, and at this time of the year space under glass is valuable. Nor can the cuttings be preserved in such a good condition as they were two months earlier, for they are sure to become drawn and weakened.

Some cultivators advocate the middle of November for the taking of cuttings, but this is too early. In many such instances the plants persist in making bloom-buds instead of growth shoots. This may be a source of much annoyance to growers in the South of England. At one time, when varieties were more generally taller in growth than they are at the present time, some growers thought that late propagation reduced the height of the plants, but now, with an improved race of varieties in their habit of growth, there is very little cause to complain about the height of the plants; they are very different to such varieties as *Mme. Clemence Audignier*, which commonly reached 14 feet in height.

The second week in December is the best time for the general propagation of Japanese and incurved Chrysanthemums. *E. M. Young.*

NEW INVENTION.

FROST FORETELLER.

THE advent of frost, especially when fruit trees are in flower, is a matter of very great importance to gardeners, and to be able to predict its occurrence with some degree of certainty when, for instance, the Peach trees on the open walls are in flower, would often save the crop from ruin. The older men on an estate are often generally accurate in their conclusions as to whether a frost is apparent or not, from observations and signs which they are not able to reduce to any exact formulæ. But there are many persons who are not gifted in this matter of prophecy, and an instrument which will determine the question for them with a certain degree of accuracy will be welcome. In our issue for March 4, 1905, p. 133, we gave particulars of the Pagoscope, an instrument invented on the Continent for foretelling frost, and which we have had opportunities for testing that have furnished satisfactory results. The well-known scientific instrument makers, Messrs. Negretti & Zambra, of Holborn Viaduct, have also registered an

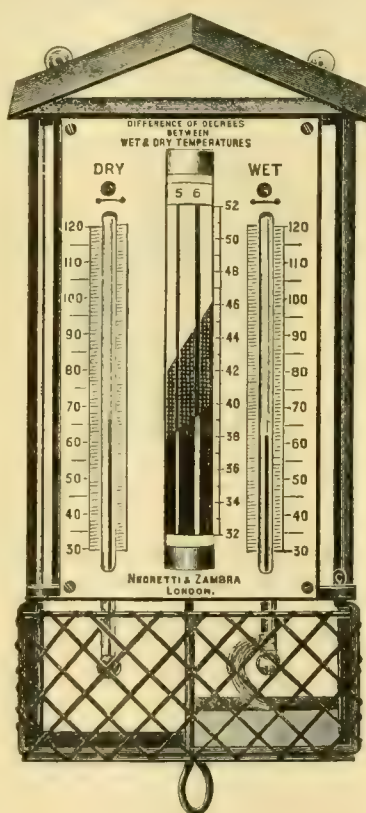


FIG. 155.—A FROST FORETELLER.

instrument for this purpose, which they have named the Horticultural Hygrometer.

The instrument is a wet and dry bulb Hygrometer, with a special cylindrical scale revolving between the thermometers. The cylinder is figured in three sections, which are intended to apply as follows:—White section, frost highly improbable; shaded, frost doubtful; black, frost very probable. The cylinder has 10 lines numbered 1, 2, 3, 4, up to 10; these represent the difference of degrees between the readings of the wet and dry thermometers. The method of observing is as follows:—The instrument must be placed in the open air, but in such a position that the sun's rays will not fall upon it. The observation should be taken as late in the evening as possible. Upon arriving at the instrument, note the readings of the dry bulb and the wet bulb, and the difference between the two. The cylinder is next turned until the line and figure representing this difference is at the right-hand side of the opening. The wet-bulb reading will fall opposite one of the three sections of the scale on the right-hand side of the opening, and from this the observer can ascertain whether frost is likely to occur during the night.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

VEGETABLE TRIALS AT WISLEY.—Whilst the Fruit Committee of the Royal Horticultural Society have for some time past been aware of the society's rule that no award be made to Potatoes, Peas, Beans, Tomatoes, Cucumbers and similar vegetables before trial at Wisley, it has occasioned some surprise that the Council have annulled an award recently made by the Fruit and Vegetable Committee to a seedling Melon. The action of the Council has naturally caused much unpleasant feeling. That there was a good trial of Melons at Wisley last year is true, and it can be said to have been the very best trial of anything of its kind, or of vegetables yet seen at Wisley. Still no intimation had been conveyed to the Fruit Committee that Melons had been placed by the Council in the prohibitory list for awards at Vincent Square unless tried at Wisley with standard varieties. So far as Melons are concerned, I have no interest in them; indeed, I think we have not only far too many, but that also no recently-introduced variety has excelled existing varieties. No matter how apparently meritorious the subject may be, the rules of the Council are imperative, and the committee is powerless to grant an award. What is needed is the widest possible diffusion of the information that certain specified subjects cannot be adjudicated upon at Vincent Square if sent for award, but must be sent first to Wisley to be there grown. That would save the public from errors and the Fruit Committee from much unpleasantness. At the same time clear intimation should be given by the Council as to what subjects will be tried at Wisley during the succeeding year. That is important, and it is also urgent that all such trials should be of the most perfect description, and being so, need not be conducted in successive years. The Fruit Committee warmly welcome these trials, for it is far more satisfactory to see subjects under growth side by side with standard varieties than it is to judge of their merits at the committee table. I trust, therefore, the Council will take care that the widest publicity is given to their rules in relation to trials, and thus in the future lead to the avoidance of any misunderstanding. *A. D.*

A GOOD CROP OF POTATOS.—Mr. F. J. Buckler, Carr Hill, Whitby, has grown a good crop of Potato "The Factor." The tubers were planted on April 24, and the crop was lifted on September 24. The rows extended from east to west, two feet apart, and the "sets" at distances of 18 inches apart. The total crop was 1,067 lbs. from a plot of land 25 feet by 35 feet. If there is no error in the calculations this is about 24 tons per statute acre. *J. Udale.*

GROWTH OF ROSES.—Seeing the letter in the last issue of the *Gardeners' Chronicle* in respect to the growth of the climbing Rose Dorothy Perkins, I think it may interest some readers to know that I have just transplanted one, which was planted in October, 1906, as a cutting 6 inches long, and has within 12 months produced a growth measuring 17 feet 9 inches in length. I have several other plants from the same lot from 10 feet to 14 feet in length. *C. N. Brameld, Pightley House, Spaxton, Bridgwater.*

CULTURE OF COCKSCOMB.—I do not agree with Mr. Francis (p. 362), in placing these plants on a dry shelf in a hothouse, for in such a position they are usually attacked by red spider and other pests, and then they seldom produce clean, well-developed inflorescences. My experience proves that seedlings do best if the pots are plunged in a sweet, mild hotbed, composed of table-manure and leaves, directly they are potted. The plants should be placed near to the glass and be allowed plenty of room. They should be afforded larger pots as required, until they are finally placed in 6 or 7-inch pots. The plants need to be sprinkled overhead, and the frames should be closed early in the afternoon, and at night-time be covered with mats. By this treatment they will make vigorous growth and develop large, handsome, clean "combs," and be ready for exhibition during July, August, and September. The plants should not be shaded at any time. *T. Fitch, Somers.*

MODERN FLOWER GARDENING.—A system of flower gardening is carried out in varying degrees of intensity in the gardens at Hopetoun House, Carberry Tower, Preston Hall, Gosford House, Tynninghame, Broxmouth Park, Yester, and Floors Castle. It is an offshoot of the herbaceous or mixed border at its best, and though at most of the places mentioned herbaceous borders are yet extant—at Floors they have been practically swept away, or rather refurnished—it is obvious that with a few exceptions the sun of the herbaceous plant is undergoing an eclipse, no doubt to emerge some day out of its obscurity. I regret a step that must crush out the always interesting mixed border, but it is clear that the latter cannot compete in the way of producing an autumn effect with borders and beds planted solely for that season. In some respects it is therefore retrograde, but the desire for an overpowering floral display is irresistible, and not improbably the shreds and patches of former fashions in flower gardening which still persist will all be swept away to make room for the newest. There is no exclusiveness as to the kind of flowers employed. Provided they give colour and remain in good condition till the end of the season, that is enough. Sweet Peas in some gardens, at Yester for instance, are made use of to an unusual extent. In others they are not employed for effect. Snapdragons and Larkspurs (the stock-flowered in particular) are used in profusion. It is hard to say which is the more effective, though the bold masses of the Larkspur are, no doubt, the more imposing. *Alonsoa mutisii*, *A. Warszewiczii*, *Salvia horminum* and its pink form, *Dobbie's Scotch Marigolds*, *Kochia triophylla*, *Celsia Arcturus*, Dwarf *Senecio elegans*, Dwarf *Linarias*, rose-coloured Mallows, salmon-coloured Clarkias, and Hollyhocks are the chief species raised from seeds. *Salvia patens*, *Calceolaria amplexicaulis*, *Lobelia cardinalis*, *Heliotrope*, *Pentstemons Newbury Gem* and *Preston Seedling*, and an old pink-flowered variety, are indispensable; these are all small flowered. Mr. Galloway, of Gosford Gardens, has secured in Gosford Pink a very fine clear rose-pink *Pentstemon*, and Lady Yester is claimed by Yester and by Preston Hall. It is a deeper rose-coloured *Pentstemon*. I am working up a stock of the large-flowered *Crimson Gem* and Mrs. James Keenan, but on the whole the large-flowered section is best represented by seedlings raised in the spring of the same year. *Aster acris* is largely employed at Floors and at Broxmouth. There are several *Chrysanthemums* more or less used at different places. *Goacher's Crimson*, *Crimon* and other forms of *Madame Massé*, *Polly* and the *Grunerwald* family. Late-flowering *Helianthus*, e.g., *D. Dewar*, *Miss Mellish*, and annual *Sunflowers*. *Rudbeckia laciniata* and *speciosa*, *Campanula pyramidalis*, *Aster Linosyris*, *Dahlia Glory of the Garden*, *Pompon*, *Mars*, and Mr. Tait, together with *East Lothian Stocks* are some others. *Lobelia tenuior* has been fine here this season. *Queen Alexandra Marguerite* is making its way, and among the most charming of the less used plants are large groups of *Montbretia Vulcan*, *Chrysis* and *Messidor*. *Germania Brilliant* and *Vulcan* are much alike as to effect, but I prefer the latter variety. *Fleuve Jaune* is also worth attention, but *Montbretias* no doubt require to be tested previously to being planted in a conspicuous position. *Humea elegans* is regaining the place it lost 30 years or so ago, and is being employed somewhat extensively in some gardens. Meanwhile there is no desire to eliminate tuberous *Begonias*, *Carnations*, *Kniphofias* (*Tritomas*), nor even *Pelargoniums*, though they are, perhaps, less in evidence than formerly. The reader will probably smile as he peruses these remarks. There is nothing novel about the plants, but arranged as they are in large masses in wide borders, and used in a profusion never before attempted, they provide a spectacular effect that must be seen to be realised. Autumnal visitors from the south express themselves delighted, and the style is sure to be adopted in the gardens of many of these visitors as it is being adopted elsewhere. Some of the effects, it must be confessed, are crude, but time will tone down these simultaneously with the opening of the minds of gardeners to the deficiencies. R. P. Buxton.

ARTHROPODIUM CIRRHATUM.—About four years ago I received some seedlings of this New Zealand plant, a note on which appeared on page 235, and determined to try the species in the open garden in South Devon. The plants made good growth, and last year flowered splendidly, the clump producing 15 flower-heads.

These, with their large heads of pure white blossoms, carried well above the broad, drooping foliage, made a very pretty picture. They were at their best early in June. Last winter, which was exceptionally severe in the south-west, the plants suffered rather badly, and, though they eventually recovered, did not bloom this year. Slugs are extremely fond of the juicy leaves, but by placing a collar of perforated zinc around the clump and by constant inspection they have been prevented from doing any material harm. S. W. Fitzherbert.

GRAPES AT THE SHREWSBURY SHOW.—The Committee of the Shropshire Horticultural Society, I know from experience both as an exhibitor and judge for the last 30 years, are always open to consider any suggestions which are put forward for the purpose of making their show more attractive. I do not know if it is their intention to offer another challenge vase for a large collection of Grapes, which tends to limit—owing to the number of varieties and branches required—the competition to a few gardeners. I should like to see in its place three separate championship prizes for (1) three bunches of Black Hamburg, (2) three bunches of Muscat of Alexandria, (3) three bunches of Madresfield Court. The following I should suggest as prizes for each:—1st, £10 cup or money value (at exhibitor's choice); 2nd, £8; 3rd, £6; 4th, £4; 5th, £2; 6th, £1. I am aware that this represents a lot of money, but money is not the principal object with such a wealthy society. Several of the classes for these three Grapes might be discontinued, and the money used for the championship prizes mentioned above. I feel confident these liberal prizes would bring a tremendous entry from all parts of the kingdom, and they would bring forward a great many growers who do not at present exhibit. These summer Grapes are generally grown by gardeners, and are mostly at their best when the Shrewsbury show takes place, with the exception possibly of the "Muscats." Small gardeners would have a chance in these single classes, whereas they were practically excluded in the large collection. *Piedmont*.

FUCHSIAS AS DECORATIVE PLANTS.—I read with pleasure the note on p. 345 respecting the *Fuchsias* cultivated and raised by my late father-in-law, Mr. James Eve. I believe his varieties are still equal to any that have been raised. At White Knights Gardens, *Fuchsias* are, in the summer time, plunged and planted out in the beds and borders, where they are much admired. As exhibition plants *Fuchsias* are also very suitable subjects. I have taken the first prize for these plants at Reading Shows for more than 20 years. Nothing would give me greater pleasure than to bring half-a-dozen plants to London to compare with Mr. Webster or any other noted grower, providing the Royal Horticultural Society offers a sufficient inducement for our trouble. *P. Bright, The Garden, White Knight Park, Reading.*

EFFECT OF INARCHING VINES.—Many cultivators believe that the inarching of one vine on to another variety has an effect upon the future produce, and many instances can be quoted where an advantage has apparently been obtained, or the results seem to be an improvement upon ordinary cultural methods. I am prompted to write this note from what I saw at the recent fruit show of the R.H.S. In the class for two bunches of Muscat of Alexandria there were 13 competitors. The 3rd prize exhibit, from Mr. W. Allan, Gunton Park, although small in bunch, had the berries so magnificently coloured that they attracted much attention, and, knowing the vines so well from which they were cut, I was impressed with the apparent advantage of inarching. The vine from which these bunches were cut was inarched on to a plant of Foster's Seedling. Since they came into bearing condition an entire absence of shanking is the result. The colour and flavour, too, have improved, and so has the keeping quality of the berries, which are also more uniform in size. Gros Marquis, in another variety, is inarched on to Gros Colmar, which influences the shape of the bunches, making them more massive in the shoulders and altogether improved. Mr. Shingler, at Melton Constable, practises some inarching Muscat Hamburg, on a Black Hamburg stock, made in 1906, a remarkable

growth, giving proof of the suitability of this variety as a stock. At the time when Madresfield Court was introduced to public notice, some 35 years ago, its culture was not so well understood as it is at the present time. To prevent cracking of the berries, to which the variety is prone, the inarching on to various stocks was one means of checking this fault. Mrs. Pince, too, has been improved by inarching. I am acquainted with an instance of this vine growing on Black Hamburg, and deriving much benefit in the better colouring of the berries. Cannon Hall Muscat inarched on to Black Alicante, and Alnwick Seedling on the same variety, have also been much improved. E. Molyneux.

SOCIETIES.

ROYAL HORTICULTURAL.

NOVEMBER 26.—There was a moderate display of exhibits at the usual fortnightly meeting of the Committees held in the Vincent Square Hall on the above date. Orchids composed the dominant feature, and the Awards recommended by the ORCHID COMMITTEE included one First-Class Certificate, one Botanical Certificate, and five Awards of Merit.

The FLORAL COMMITTEE recommended an Award of Merit to a variety of *Chrysanthemums* and a golden-coloured form of *Juniperus chinensis nana*.

At the afternoon meeting of Fellows, Mr. Baker delivered a lecture on "Garden Experiments."

Floral Committee

Present: W. Marshall, Esq. (chairman), and Messrs. H. B. May, Geo. Nicholson, Jno. Green, G. Reuther, C. Dixon, R. C. Notcutt, C. R. Fiddler, J. F. MacLeod, W. I. Ware, W. Bam, H. J. Jones, C. E. Pearson, W. Cuthbertson, W. P. Thomson, E. H. Jenkins, W. J. James, Geo. Paul, W. Howe, Jas. Hudson, H. J. Cuthbush, R. Hooper Pearson, and George Gordon.

LORD HOWARD DE WALDEN, Suffolk Walden, gr. Mr. James Veitch, displayed an excellent exhibit of *Begonia Glorie de Lorraine* and its white variety. The plants were fine, bold specimens, some pyramidal-trained, others having a more bush-like habit, but all alike were freely-flowered, their colour being perhaps a little pale. The group was relieved with Ferns and Palms, the manner of staging gaining the approbation of the Committee. (Silver-Gilt Flora Medal.)

Messrs. J. HILL & SON, Barrowfield Nurseries, Lower Edmonton, showed a miscellaneous collection of Ferns in more than 100 varieties. Nearly all the genera of Ferns were represented in this large exhibit, which occupied the whole of a long table at the platform end of the building. (Silver-Gilt Flora Medal.)

Messrs. H. B. MAY & SONS, Dyer's Lane, Upper Edmonton, showed an interesting group of Epiphytic Ferns. One of the most remarkable plants was a specimen of *Aglaomorpha Meyeniana* growing in a small pot. In the centre of the exhibit were hanging plants of *Platynerium*, and around were *Polypodiums*, *Drymoglossums*, *Davallias*, *Goniophlebium brasiliense*, *Asplenium elegantulum*, and others of a scandent habit. (Silver-Gilt Banksian Medal.)

Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, filled a long table with showy greenhouse plants in flower, including *Begonias*, *Jacobinias*, *Tillandsia Lindenii*, and *Exacum macranthum*. Interspersed at one end of the exhibit were plants of the *Citrus* family in fruit, and shoots of the brilliantly-berried *Crataegus coccinea indentata*. (Silver Flora Medal.)

Messrs. W. CUTHBUSH & SON, Highgate, London, N., showed greenhouse plants, including *Astilbe* (*Spiræa*), *Ericas*, small ornamental Orange trees in fruit, *Skimmia*, *Pernettya*, and other small shrubs in berry, with Palms, Ferns, &c., for relief. (Silver Banksian Medal.)

Mr. L. R. RUSSELL, Richmond, exhibited a large group of ornamental-leaved and berried shrubs in species of *Eleagnus*, *Ilex*, *Pernettya*, *Skimmia*, *Garrya*, *Aucuba*, &c. (Silver Banksian Medal.)

Some remarkably fine sprays of *Pernettya mucronata* were shown by A. KINGSMILL, Esq., Harrow Weald (gr. Mr. T. Taplin). The large clusters of berries resembled small bunches of Grapes.

Messrs. JOHN WATERER & SONS, LTD., Bagshot, Surrey, showed choice varieties of Conifers, many of which were small specimens. In addition to Conifers were variegated Hollies, *Skimmia japonica*, Box in variety, Privets, *Osmanthus myrtifolius*, &c. (Silver-Gilt Banksian Medal.)

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, showed vases of Carnations and baskets of their salmon-coloured Cyclamen named Salmon King. (Silver Banksian Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, showed bunches of Zonal Pelargoniums in most of the newer varieties and several "single" Chrysanthemums. (Silver Banksian Medal.)

Mr. H. J. JONES, Ryecroft Nursery, Hither Green, Lewisham, showed Chrysanthemums in variety. At the back of the exhibit were large vases filled with big blooms of Japanese varieties, including J. G. Day (reddish-bronze), R. C. Pulling (yellow), Mrs. H. Perkins, Mme. R. Oberthur (an excellent white variety), Mrs. Tom Fagg (yellow), John L. Burgess (a rich colour, a shade of magenta). In front were smaller vases containing single specimen blooms and bunches of decorative varieties, the whole displayed with the usual taste shown by this exhibitor. (Silver-Gilt Banksian Medal.)

Mr. PHILIP LADDS, Swanley Junction, Kent, staged market varieties of Chrysanthemums. The exhibit contained medium-sized flowers well selected as to colouring and including the best of the older as well as the newer varieties suitable for market purposes. As a selection we may enumerate Snowdrift (white), Negoya (yellow), Golden Age (yellow), Mme. Oberthur (white), Winter Cheer (pink), Prolific (white), Buttercup (yellow), and Mrs. T. Humphreys (red). (Silver Flora Medal.)

Messrs. W. WELLS & Co., Merstham, Surrey, showed a large selection of single Chrysanthemums, including many new varieties of his raising.

A display of Chrysanthemums was also staged by the Duke of RUTLAND, Belvoir Castle, Grantham (gr. Mr. W. H. Divers).

A number of seedling Chrysanthemums, many of which were raised from *C. indicum*, was shown by G. FERGUSON, Esq., The Hollies, Weybridge (gr. Mr. Smith). The whole of the varieties in this extensive collection were raised by the exhibitor.

AWARDS OF MERIT.

Chrysanthemum "Edith Jameson."—This is a very large Japanese variety, with drooping or reflexed florets, colour deep rosy-lilac. An excellent exhibition variety of considerable refinement. Shown by Mr. NORMAN DAVIS, Framfield Nurseries, Uckfield.

Juniperus chinensis nana aurea.—This is a pretty little shrub, suitable for cultivation on the rock garden, or in a similar situation. It is just as dwarf as *J. c. nana*, and develops a pretty golden tint. Shown by Messrs. JOHN WATERER & SONS, LTD.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, De B. Crawshay, J. Wilson Potter, W. H. White, H. G. Alexander, H. A. Tracy, H. J. Chapman, W. P. Bound, A. A. McBean, G. F. Moore, F. J. Hanbury, W. Boxall, H. Little, W. H. Young, W. Bolton, Arthur Dye, R. G. Thwaites, F. M. Ogilvie, and J. Charlesworth.

There were nine groups staged, and 35 plants entered to go before the Committee.

Messrs. CYPHER & SONS, Cheltenham, secured the highest award, a Silver-Gilt Flora Medal, for a very fine group of *Cypripediums*, which contained a remarkable selection of varieties of *C. insigne*, and many fine hybrids. Among the *C. insigne* varieties, Monkshood, with a cowl-like arrangement of the dorsal sepal, Harefield Hall, Dulcotense, and Mr. W. P. Bound were the most distinct of the 30 forms shown, which included a good selection of yellow varieties. Of other plants noted were *Zygopetalum rostratum*, and a fine selection of varieties of *C. Lee-anum*.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, secured a Silver Flora Medal for a bright group, in the centre of which were a number of the orange and crimson *Lælio-Cattleya* Cappei. With them were a fine example of the

richly-coloured *Cattleya Dowiana Rosita*, and one of *C. aurea marmorata*, together with several new hybrid *Cattleyas*. Also the rare *Phalænopsis Lindenii*, *Lycaste Tunstallii*, *Phaius flavus*, and some fine novelties, including the pure white *Odontoglossum ardentissimum* xanthotes, resembling the *O. crispum* xanthotes, which was one of the parents.

FRANCIS WELLESLEY, Esq., Westfield, Woking, was awarded a Silver Flora Medal for a compact group of rare *Cypripediums*, all very finely grown, and including varieties of *C. Arthuri-anum*, the unapproachable *C. Thalia* Mrs. Francis Wellesley, *C. T. giganteum*, *C. Gaston Bultel* (Westfield variety), a grandly-shaped flower, &c.

Major G. L. HOLFORD, Westonbirt, Tetbury (gr. Mr. H. G. Alexander), showed his new *Lælio-Cattleya Barbarossa* (L.-C. *callistoglossa* x *C. Trianae*), a noble flower with rosy-lilac

C. Euryades splendens, *C. Milo* (Westonbirt variety), *C. Tityus*, *Cattleya Portia*, *Cymbidium Tracyanum*, *C. Winnianum*, *Oncidium Lance-anum*, *Dendrobium heterocarpum* (with over 50 flowers), the rare, unspotted *Odontoglossum Rossii immaculatum*, and other good things. (Silver Banksian Medal.)

Messrs. SANDER & SONS, St. Albans, showed a group in which were the beautiful *Cypripedium Beechense* superbum, the dark-coloured *C. rufus* (insigne McNabbiana x Milo), *C. Shakespear* (*Euryale* x *Rothschildianum*), *C. Charlesworthii* albens, *C. Niobe* (Sander's variety), a very finely-coloured and distinct form, *C. Maudiae*, *C. San-Actæus*, &c.

W. M. APPLETON, Esq., Weston-super-Mare, staged an effective group, in the centre of which was his *Dendrobium Phalænopsis splendens*, which had already secured an award; also several other brightly-coloured varieties. Mr.



FIG. 156.—ODONTOGLOSSUM "JOHN CLARKE," AS EXHIBITED BY BARON SIR HENRY SCHRÖDER ON TUESDAY LAST (FLOWERS MUCH REDUCED). (See p. 381.)

sepals and petals and rich claret lip; *Cypripedium Cynthia*, a very beautiful flower with large white dorsal sepal blotched with rose, the petals and lip being yellow tinged with purple.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), sent *Cypripedium gigas* (Glebelands variety), a very handsome dark-coloured hybrid of fine form.

Messrs. JAS. VEITCH & SONS, Chelsea, were awarded a Silver Banksian Medal for a neat group, in which were the fine *Lælio-Cattleya Dominiana langleyensis*, L.-C. *Ilione*, *Brassolælia Digbyano-purpurata*, *Cypripedium vexillarium*, *Cypripedium insigne* Sanderæ, &c.

Messrs. HUGH LOW & Co., Enfield, showed a good group of *Cypripediums*, &c., including *C. Actæus* (Drewett's variety), *C. Ville de Paris*,

APPLETON also showed a number of very interesting crosses of *C. tonsum* and *C. exul*, *C. Mastersianum* x *insigne*, *Lælio-Cattleya Clive*, L.-C. *Decia*, *Dendrobium superbians*, &c. (Silver Banksian Medal.)

Mr. H. A. TRACY, Amyand Park Road, Twickenham, staged an interesting group, in which the *Cypripediums* were specially good. *C. insigne Herbertii* was a pretty variety of the montanum class, *C. i. King Edward VII.*, a good flower, *C. i. Harefield Hall*, *C. i. Sanderæ*, and *C. Mauretania*. (Silver Banksian Medal.)

Monsieur MERTENS, Ghent, showed a good selection, including *Odontoglossum altum*, *O. Wilckeanum*, *O. Vuylstekei*, *O. percultum*, *Mil-tonia vexillaria augusta*, *M. Bleuana*, and other hybrids. (Silver Banksian Medal.)

Sir TREVOR LAWRENCE, Bart. (gr. Mr. W. H. White), sent *Cypripedium Arnoldiæ inversum*, a fine, reddish-purple tinted flower, like a large *C. Chas. Rickman*.

NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr. Mr. H. J. Chapman), staged a charming little group, in which were a noble specimen of *Cypripedium insigne Sanderæ*; a smaller one of the better Oakwood seedling variety of it; *C. Actæus aureus*, and others.

J. H. CRAVEN, Esq., The Beeches, Keighley, sent *Cypripedium Daltonianum*.

H. J. BROMILOW, Esq., Rann Lea, Rainhill, Lancashire (gr. Mr. Morgan), showed *Cypripedium Fulshawense* and *C. Marjorie*.

E. ROBERTS, Esq., Park Lodge, Eltham, sent *Cypripedium Hitchinsii* princeps.

J. WILSON POTTER, Esq., Croydon (gr. Mr. W. H. Young), sent a good variety of *Lælio-Cattleya Baroness Schroder*.

H. S. GOODSON, Esq., Putney (gr. Mr. Day), showed *Cypripedium Lily Blanche* (*Charles-worthii* × *Niobe*).

H. LITTLE, Esq., Baronshalt, Twickenham (gr. Mr. Howard), sent *Lælio-Cattleya elegans*, Baronshalt variety, a good form, with unusually large ruby-purple front to the lip.

H. SPICER, Esq., Aberdeen Park, Highbury (gr. Mr. Lovegrove), showed a group of *Cypripedium Spicerianum*.

Messrs. HEATH & SONS, Cheltenham, staged a good group, in which were the fine *Cypripedium Blanche Moore*; several good *C. Leeannum*, the most distinct of which was the variety *Fowlerianum*; *C. Daphne*, and other hybrids; the pretty *C. Schlimii*, good *Oncidium varicosum*, *Cattleya labiata*, &c.

AWARDS.

FIRST-CLASS CERTIFICATE.

Odontoglossum John Clarke (see fig. 156), from Baron Sir H. SCHRODER, The Dell, Egham (gr. Mr. H. Ballantine).—A grand *Odontoglossum*, of unrecorded parentage, and named after Mr. J. Clarke, for many years foreman in the fine gardens at The Dell. The plant bore a strong spike of 18 flowers and buds, each flower between 4 and 4½ inches across, and broad in all its segments. The ground colour is white, tinged with purplish-mauve, and heavily blotched with a darker tint of the same colour. Lip, indicating *O. Rolfeæ* as one of the parents, pure white, with dark purple markings around the light yellow crest.

AWARDS OF MERIT.

Lælio-Cattleya Ortrude (*L. anceps* × *C. Dowiana aurea*), from Major G. L. HOLFORD, C.V.O., C.I.E. (gr. Mr. H. G. Alexander).—The best of the crosses of *L. anceps* and a really pretty flower. Sepals and petals blush-rose colour; lip broad, crimson, with gold lines at the base.

Cypripedium Ernest Read (parentage unrecorded), from J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis).—A grand flower, and a perfect model from the florist's point of view, the bloom being well rounded, broad in all its parts, and of fine substance. The ground colour is cream-white, delicately tinted with rose, and slightly marked with emerald green, after the manner of *C. Felicity*.

Cypripedium niveo-callosum, Cookson's variety (*niveum* × *callosum Sanderæ*), from NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr. Mr. H. J. Chapman).—A very pretty, wax-like, white flower, effectively tinged and spotted with bright rose colour.

Cypripedium San-ae-dora superbum (*San-Actæus* × *insigne Sanderæ*), from NORMAN C. COOKSON, Esq.—A close approach to *C. insigne Sanderæ*, but slightly darker in the yellow colour, and with more white in the dorsal sepal.

Angracum Buyssonii, from Messrs. CHARLES-WORTH & Co., Heaton, Bradford.—A very remarkable and rare species of the *A. articulatum* and *A. Ellisii* class, but differing widely from those species in its extended and trailing habit of growth. The plant bore three stems of 16 to 18 leaves each, and with two spikes of many pure white flowers, with long spurs tinged with pale reddish-brown.

BOTANICAL CERTIFICATE.

Cirrhopetalum Makoyanum, from Sir TREVOR LAWRENCE, Bart., Burford (gr. Mr. W. H. White).—An elegant species, with slender stems,

bearing on the top an equally-rayed umbel of yellow flowers, slightly tinged with red, and arranged like the spokes of a wheel.

Fruit and Vegetable Committee.

Present: G. Bunyard, Esq. (in the chair), and Messrs. O. Thomas, C. Foster, P. D. Tuckett, J. Jaques, G. Reynolds, J. Davis, Jas. Vert, A. R. Allan, Geo. Kelf, H. Parr, A. Dean, W. Bates, and S. T. Wright (hon. sec.).

From the gardens of the Duke of Rutland, Belvoir Castle, Grantham (gr. Mr. W. H. Divers), was staged a group of Apples and Pears, comprising 100 dishes, in about equal numbers. This was a very excellent display, especially when the adverse season is considered. The fruits were finely coloured, although, perhaps, not so clear of skin as is seen in fruits from more southern counties. The varieties included representatives of standard kinds. (Silver-Gilt "Hogg" Medal.)

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, again displayed a collection of hardy fruits, and small trees of Oranges in fruit. (Silver Banksian Medal.)

Dishes of Oranges and Lemons were shown by Mrs. C. THORNHILL, Stanton Hall, Bakewell (gr. Mr. Geo. Harvey). The exhibit comprised six plates of very large Oranges, and half that number of Lemons. The former fruits were suitable for the making of preserves. (Silver Banksian Medal.)

"GARDEN EXPERIMENTS."

At the afternoon meeting, Mr. F. J. Baker delivered a lecture on this subject. At the commencement he explained some of the reasons for cultivators undertaking experiments for themselves, and stated many advantages that may be gained by their so doing. The second part of the lecture consisted in describing certain experiments that the lecturer had carried out himself. The first one had relation to the need for supplying nitrogenous manures to Peas and other crops of leguminous plants. The results were: (1) the most necessary requirement in the cultivation of Peas was deep and thorough tillage; (2) the crop could be still further increased by adding ordinary stable manure; (3) and in a much lesser degree by also adding mineral manures.

The next experiment to which reference was made showed the excellent results following underground, as opposed to surface, watering of crops. The third had to do with the pruning or non-pruning of newly-planted trees, and the lecturer was emphatic in his recommendation that the cultivator should prune the young tree whilst he held it in his hand, and could therefore tell how to secure the balance between the amount of top growth and the roots, stating that he should give a slight advantage to the roots.

In respect to summer-pruning, a system of twisting the shoots spirally without cutting or breaking them was described, and shoots with fruit buds were shown, illustrating the results obtained therefrom. The pruning is done in winter, cutting the shoots back to the point at which the twisting was carried out.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 26.—The annual dinner of this Society was held at the Holborn Restaurant on the above date, and was again a success, the attendance numbering upwards of 100 and including many ladies.

The president of the Society, Charles E. Shea, Esq., occupied the chair, and amongst those present were Sir Albert Rollit, and Messrs. John Green, Thomas Bevan, C. Harman Payne, J. H. Witty, J. W. Moorman, W. Howe, D. Ingamels, J. McKercher, Geo. Gordon, J. Collingridge, S. Mortimer, H. J. Jones, Norman Davis, D. B. Crane, and J. Harrison Dick.

The usual loyal toasts having been duly honoured, the CHAIRMAN proposed the toast of "The National Chrysanthemum Society," and mentioned that, owing to continued ill-health, it would be the last occasion on which he would be present as their president. He considered much good work had been done by the Society during the past year; the Year Book had been of enormous value, and the exhibition of market Chrysanthemums was both interesting and instructive. Mr. SHEA mentioned that 70 new

members had been added to the Society during 1907, and seven societies affiliated, and he considered this was principally brought about by the leaflet the Society had caused to be inserted in the various trade catalogues.

Sir ALBERT ROLLIT gave the toast of "The Donors of Special Prizes," and remarked that the Society had now 430 members, 109 affiliated societies, and a reserve fund of £100. The Floral Committee had to deal with 194 applications for First-Class Certificates, 25 of which were granted. The special prizes received were valued at £36, of which the President gave eight guineas.

Mr. J. A. BOTHAM responded, and mentioned that the Crystal Palace Co., whom he represented, were now on the high way to profit-making, and, whilst continuing the special prizes given to the Society, they hoped next year to considerably augment them.

Mr. J. COLLINGRIDGE proposed the toast of "The President, Vice-President, and Officers of the Society," and Mr. T. BEVAN, in replying, mentioned that he had been actively connected with the Society for 23 years. Mr. JOHN GREEN, Treasurer, also replied, and said it was a lamentable fact that the Society had only 430 members, and he appealed to all members to bring in at least one new member during the coming year.

The toast of "The Exhibitors and Affiliated Societies" was proposed by Mr. E. F. HAWES, who said there was no sign of decay in the culture of the Chrysanthemum. Standard and trained plants were now practically non-existent, and bush plants and plants in 5 and 6-inch pots were cultivated in their stead. Mr. R. CANNELL responded, as also did Mr. R. B. LEECH, of the Dulwich Chrysanthemum Society, who said he hoped his society would have to fight for the Challenge Shield next year and not find again that there was no competition.

Other speakers were Messrs. C. HARMAN PAYNE, D. B. CRANE, J. MCKERCHER, J. W. MOORMAN, GEO. GORDON, and H. G. COVE.

The prizes were presented during the evening, and amongst the recipients was Mr. W. Higgs (gr. to J. B. HANKEY, Esq., Fetcham Park, Leatherhead), who received the Holmes Memorial Challenge Cup for the tenth year in succession.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

NOVEMBER 14.—Committee present: Messrs. E. Ashworth, R. Ashworth, Ashton, Cowan, Cypher, Dr. Hodgkinson, Keeling, P. Smith, Shill, Sander, Ward, Warburton, Walmsley, and Weathers (hon. sec.).

There was again a fine display of plants, and if the present interest continues, more commodious premises will be required for the society's meetings.

No fewer than 14 distinct groups were shown.

E. ASHWORTH, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), exhibited the rare *Dendrobium Cœlogyne*, which gained an Award of Merit.

G. SHORLAND BALL, Esq., Burton, Westmoreland (gr. Mr. Herdman), exhibited a group of *Cypripediums* in competition for the "Sander Cup," and received a Silver Medal. Amongst the plants in this group were *C. × Olivia*, *C. × Hitchensæ* var. *Perfection* (Award of Merit), *C. niveum* var. *Goliath* (Award of Merit). A plant shown under the name of *C. × Ballæ* appeared to be a form of *C. × Godefroyæ* var. *leucochilum*, but it was declared to be a hybrid between *C. bellatulum* delicatum and *C. niveum*. An Award of Merit was voted to this last-named plant under the name of *C. × Godefroyæ* var. *Ballæ*.

J. MACARTNEY, Esq., Bolton (gr. Mr. Holmes), was awarded a Silver Medal for a group of *Cypripediums*, of which *C. × J. Ritson* was voted an Award of Merit.

A. WARBURTON, Esq., Haslingden (gr. Mr. Dalgleish), staged a group consisting of miscellaneous Orchids and another of *Cypripediums* (in competition for the "Sanders' Cup," and the "Thompson's Cup"). Amongst the *Cypripediums* were noticed *C. × Memoria Mocsii*, *C. Milo*, *Westonbirt* var., *C. insigne* var. *Statleriana*, *C. insigne* var. *Bohnofiana*, *C. × Leonæ* var. *grandiflora* (Award of Merit). A Silver Medal was awarded for each of these groups.

Z. A. WARD, Esq., Northenden, staged a group of *Cypripediums*, in which were well-grown examples of leading varieties. (Silver Medal.) Messrs. CYPHER & SONS, Cheltenham, were awarded a Silver Medal for a group of plants in which were some good forms of *Cattleya labiata* and *Cypripediums*.

Mr. J. ROBSON, Altrincham, staged a group of plants, to which a Bronze Medal was awarded.

J. H. CRAVEN, Esq., Keighley (gr. Mr. Corney), was awarded a Silver Medal for an exhibit of *Cypripediums*. C. insigne, "Craven's variety," gained an Award of Merit, and C. \times *cananthum*, "Craven's variety," was awarded a First Class Certificate.

S. GRATRICK, Esq., Whalley Range, Manchester (gr. Mr. Shill), exhibited *Cypripedium* \times *Harri-leeanum*, C. \times Standard, West Point variety, C. \times Chorltonii, West Point variety, and *Cattleya* \times *Fabia*, West Point variety, all of which received Awards of Merit.

H. J. BROMILOW, Rainhill (gr. Mr. Morgan), made a fine display of *Cypripediums*, which gained the highest award in a Silver Gilt Medal. *Cypripedium* \times *Leander*, Rann Lea variety, received an Award of Merit. C. insigne var. *Aberdeen*, a very distinct and well-marked form, and C. \times *Marjorie*, a hybrid of good quality, of which the parentage was not recorded, received First Class Certificates.

Mr. W. BOLTON, Warrington, displayed a small but interesting exhibit.

E. ROGERSON, Esq., Didsbury (gr. Mr. Price), received Awards of Merit for *Cypripedium* \times *Actæus*, Rogerson's variety, C. \times *Sallieri*, Rogerson's variety, and C. \times *Charlesianum* var. *Rogersoni*.

Mr. W. SHACKLETON, Bradford, was awarded a Bronze Medal for a small group of Orchids, principally *Cypripediums*.

Messrs. SANDER & SONS, St. Albans, made a display of *Cattleyas*, *Odontoglossums*, &c.

Messrs. HUGH LOW & Co., Enfield, and Mr. J. E. SADLER, exhibited *Cattleya labiata* var. "Queen Maud," to which an Award of Merit was given.

R. FARRAR, Esq., Clapham, obtained an Award of Merit for *Cypripedium* \times *Hitchensæ* *Ingleborough* var.

Messrs. KEELING & SONS, Bradford, were represented by a small group of plants. P. W.

LEEDS PAXTON.

NOVEMBER 19, 20.—The 19th annual show of the above society took place on these dates. The Lady Mayoress of Leeds opened the exhibition. The show has reached a high point of excellence, and there was no falling off in numbers, more than 300 exhibits being staged.

Plant.—In the class for a group of plants arranged for decorative effect, J. PICKERSGILL, Esq., Bardon Hill, Weetwood (gr. Mr. J. Donoghue), took the 1st prize, A. WILLEY, Esq., Hill Court, Headingley (gr. Mr. W. Sharpe), receiving the 2nd, and Mr. J. G. PETTINGER, Harrogate, the 3rd prizes.

In the open class for a group of *Chrysanthemums* with foliage plants and a margin of ferns, Mr. J. G. PETTINGER, Kent Road Nursery, Harrogate, was awarded the 1st prize for a collection of well-grown plants; 2nd, E. O. SIMPSON, Esq., Oak Lea, Adel (gr. Mr. E. Lupton).

Ald. A. T. WALKER, J.P., The Elms, Weetwood (gr. Mr. F. Norman), took premier honour for four stove and greenhouse foliage plants with some fine specimens of Palms.

The best specimen table plants were shown by R. J. CRITCHLEY, Esq., Hyrst House, Dewsbury (gr. Mr. S. Hurford); the best Hyacinths by J. PICKERSGILL, Esq. (gr. Mr. J. Donoghue); and the best plants of *Begonia* "Gloire de Lorraine" by H. A. WATSON, Esq. (gr. Mr. J. Marshall).

Cut bloom.—The principal class for *Chrysanthemums* was one for 36 blooms, including 18 *Incurved* and 18 Japanese varieties. There was a good contest by six competitors, and of these the winner was Mr. CHANDLER, Churchover, Rugby, who showed some fine blooms of F. S. Vallis, Reg. Vallis, Algernon Davis, J. H. Doyle, Miss E. Crossley, President Viger, Duchess of Sutherland, Mme. G. Rivol, Gen. Hutton, Miss O. Miller, Mrs. F. W. Vallis, and (Incurved) Duchess of Eife, Mrs. H. J. Jones,

C. H. CURTIS, Triomphe de Montbrun, J. F. Evans, &c. 2nd, Mr. G. BURDEN, Manor Gardens, Sandyway.

In the class for 12 Japanese blooms Mr. CHANDLER again won the 1st prize, and he was closely followed by T. WORDSWORTH JAMESON, Esq., and Mr. G. BURDEN respectively.

For eight vases of Japanese *Chrysanthemums*, three blooms in a vase, Mrs. CONSTABLE, Manor House, Otley (gr. Mr. W. H. Aldridge), took the 1st prize with some well-finished blooms.

Incurved varieties.—The best exhibit of 12 *Incurved* blooms, in not fewer than six varieties, was shown by Mr. G. BURDEN; 2nd, T. W. JAMESON, Esq.

Single Chrysanthemums.—The best twelve vases of single *Chrysanthemums*, grown naturally, were shown by Mr. JOHN THORNTON; 2nd, Mr. GEO. BUCK, Hall Lane Gardens, Horsforth.

A table of cut blooms arranged for effect was best shown by the proprietors of the HOTEL MAJESTIC (gr. Mr. L. Hanchant).

Amongst other successful exhibitors in the decorative classes were Mr. J. R. GROUNDWELL, Buslingthorpe; Messrs. ALDIS & ROWNTREE, Leeds; and J. PICKERSGILL, Esq. (gr. Mr. J. Donoghue).

Fruit and vegetables.—The best two bunches of Black Grapes were shown by Ald. A. T. WALKER, J.P., The Elms, Weetwood (gr. Mr. Fred Norman); and the best two bunches of White Grapes by G. H. SHAW, Esq. (gr. Mr. A. Blakey). Mr. G. H. SHAW was also 1st for six dessert Apples, and again for six varieties of culinary Apples and in the class for Pears.

In the class for a collection of eight kinds of vegetables, Mr. OLIVER PILLING, Elland, won the 1st prize; while for a collection of six varieties of vegetables Mr. J. R. GROUNDWELL was most successful.

Non-competitive exhibits. A display of Carnations was tastefully shown by Mr. F. C. EDWARDS, Leeds. Collections of fruit were shown by the AGENT-GENERAL OF BRITISH COLUMBIA, Messrs. LAXTON, Bedford, and J. R. PEARSON & SONS, Lowdham. *Chrysanthemums* were displayed by Messrs. CLIBRAN, Altrincham, and by Messrs. W. WELLS & Co., Merstham, Surrey. Messrs. J. W. MOORE, LTD., Rawdon, staged a collection of Orchids. Messrs. WEBB & SONS, Stourbridge, staged a collection of vegetables in most of the leading varieties. A collection of Palms, *Chrysanthemums*, &c., was exhibited by Mr. W. W. GREEN, Leeds.

NEWCASTLE-ON-TYNE CHRYSANTHEMUM.

NOVEMBER 20, 21.—The third annual exhibition of this society, held on these dates, was far in advance of the two previous shows, both in the number of the exhibits and in the quality of the flowers. At the opening ceremony, which was performed by Lady Anne Lambton, Lord Durham announced that two additional cups would be offered for competition next year, and there would also be a 15-guinea subscription cup. It was afterwards announced that eight challenge cups and two gold medals had been presented to the society for next year's competitions.

Cut blooms. In the class for 12 vases of Japanese blooms, three blooms of one variety in a vase, a Silver Cup and five guineas were offered as the 1st prize. This was won by C. BEWICK, Esq., Close House, Wylam (gr. Mr. W. Rome), for the second time. The Cup thus becomes Mr. Rome's property. The premier exhibit included fine flowers of the varieties Bessie Godfrey, F. S. Vallis, Mrs. Knox, Magnificent, Mme. V. Venosta, &c.; 2nd, Col. SADLER, Dalston (gr. Mr. Jas. Hardcastle), with bright but smaller flowers than those that secured the cup; 3rd, Messrs. ORD BROTHERS, North Shields.

In the class for six vases of Japanese blooms in not fewer than six varieties, Mr. J. HARDCASTLE was placed 1st, Mr. A. APPLETON, Brampton Junction, being awarded the 2nd prize.

The best four vases of Japanese blooms were from the gardens of W. DAVIS, Esq., Gosforth (gr. Mr. C. English); 2nd, Mr. HARDCASTLE.

In the class for three blooms of a white Japanese variety, W. RUNCIMAN, Esq., Scotswood

(gr. Mr. J. Askew), was awarded the 1st prize for Elsie Foulton; Mr. ROME followed with good examples of Mrs. A. T. Miller.

Mr. ROME won the 1st prize for three blooms of a yellow Japanese variety, with fine blooms of F. S. Vallis, whilst in the class for three Japanese blooms other than white or yellow varieties, Mr. T. H. BOLTON, Powderham Castle Gardens, Devon, was successful.

In the competition open only to growers in Northumberland and Durham, the Silver Cup offered for four varieties of Japanese *Chrysanthemums* in vases was also won outright by Mr. W. ROME, who showed fine examples of F. S. Vallis, J. H. Silsbury, Algernon Davis, and Miss Nellie Pockett; J. R. SCOTT, Esq., Benton (gr. Mr. H. Late), was awarded the 2nd prize in this class.

The Gold Medal offered for the finest bloom in the show was awarded to Mr. W. ROME for a grand bloom of the variety F. S. Vallis.

Plants.—Mr. C. ENGLISH was awarded the 1st prize in the class for four bush plants, with finely-grown and well-flowered specimens of Vivian Morel, C. Davis, and Soleil d'Octobre.

The best group of *Chrysanthemums* arranged with other flowering and foliage plants was put up by Mr. T. Bell (gr. to A. E. BAMBRIDGE, Esq., Jesmond); 2nd, Messrs. ORD BROTHERS, with a group consisting principally of large-flowered *Chrysanthemums*.

Fruits and vegetables.—The best two bunches of Black Grapes among eight competitors were shown by J. F. LAYCOCK, Esq., Wiseton, Notts (gr. Mr. W. Musk); he had finely finished examples of Gros Colmar; 2nd, Lord ARMSTRONG, Jesmond Dene (gr. Mr. J. Elliott).

Mr. ELLIOTT was 1st for White Grapes, with large, well-finished bunches of Raisin de Calabre; 2nd, Mr. T. BELL, with Muscat of Alexandria.

Messrs. MUSK, BOLTON, and DAVIDSON, won the principal prizes in the classes for Apples and Pears.

The classes devoted to vegetables were well contested. Perhaps the most remarkable exhibits in this section were the 23 stands of Leeks.

NON-COMPETITIVE EXHIBITS.

The trade exhibits were very attractive. Mr. W. H. HARDY, Gosforth, showed Carnations, winter-flowering Heaths, &c. Messrs. FINNEY & Co., Newcastle-on-Tyne, exhibited hardy fruits, Potatoes, and various flowering plants. Mr. W. LAWRENSON, Newcastle, had an extensive group of hardy fruits, Carnations, decorative shrubs, Heaths, &c. The TYNESIDE SEED STORES showed a miscellaneous collection of fruit, vegetables, bulbs, and winter-flowering plants. Mr. W. R. ARMSTRONG, Newcastle-on-Tyne, displayed Palms and other plants suitable for floral decorations. Messrs. SUTTON & SONS, Reading, were awarded a Gold Medal for an exhibit of Potatoes. Messrs. KENT & BRYDON, Darlington, had a small collection of Carnations. H. J. C.

CHESTER PAXTON.

NOVEMBER 20, 21.—The annual exhibition of fruit, *Chrysanthemums*, &c., was held in the Town Hall on these dates. The entries exceeded those of any previous year, the greatest increase being in the farmers' and cottagers' classes for hardy fruits. An interesting and extensive exhibit of Hereford-grown fruit was staged by the HEREFORD CO-OPERATIVE FRUIT GRADING SOCIETY, which was awarded the Paxton Society's Silver Medal. His Grace the Duke of WESTMINSTER, Eaton Hall, Chester (gr. Mr. N. F. Barnes), showed a non-competitive exhibit of *Chrysanthemums* and foliage plants, which occupied the lower end of the Assembly Room; this added very materially to the appearance of the room, and for general excellence was awarded the Society's Gold Medal. All the *Chrysanthemum* classes were well contested, the principal honours going to the president of the Society, T. GIBBONS FROST, Esq. (gr. Mr. T. Gilbert); F. B. SUMMERS, Esq., Bache Hall (gr. Mr. E. Stubbs); and the CHESTER COUNTY ASYLUM (gr. Mr. H. Lawson).

A large collection of *Chrysanthemum* blooms was exhibited by Messrs. CLIBRAN, Altrincham. Messrs. DICKSON'S, LTD., Chester, staged a large and excellent exhibit of *Chrysanthemums*.

WOOLTON AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 20.—The ninth annual show of this society was held in the Church Hall on the above date. The show was an unqualified success, the cut blooms being equal to any ever exhibited here. The class for nine vases of single Chrysanthemums brought seven entrants, the prize being a silver challenge trophy presented by A. H. Tate, Esq., Highfield. The premier prize in the class for 24 Japanese blooms, distinct, was won by Sir Wm. H. Tate, Bart. (gr. Mr. Geo. Haigh), who thus repeated his previous year's success and won outright the silver challenge cup presented by Mrs. Gossage. The 2nd prize was awarded to W. Tod, Esq., Dry Grange, Allerton (gr. Mr. Geo. Eaton). The best exhibit of 18 Japanese blooms, distinct, was shown by Mrs. Gossage, Camp Hill (gr. Mr. J. Sumner). 2nd, T. Clarke, Esq., Allerton Hall (gr. Mr. Jas. Clarke). In the Incurved section, Sir Wm. H. Tate, Bart., won the 1st prize for 18 distinct varieties. THOS. CLARKE, Esq., was placed 2nd. This class excited a very keen competition.

The N.C.S. certificates were both awarded to Sir Wm. H. Tate for magnificent blooms of Leigh Park Wonder and Mrs. B. Hankey.

The 1st prize, consisting of a challenge cup, for single Chrysanthemums was taken by P. W. Barr, Esq. (gr. Mr. T. Keightley). For the group of cut Chrysanthemums arranged for effect, Sir Wm. H. Tate, Bart., was most successful.

Exhibits of plants were best shown by W. Cunningham, Esq., Gorsey Cap (gr. Mr. Wm. Wilson), and ARTHUR EARLE, Esq., of Childwall (gr. Mr. T. Hitchman).

The fruit classes were not so keenly contested as in some former years. Colonel R. Ireland Blackburne, C.B., Hale Hall (gr. Mr. A. A. Evans), took 1st place for two bunches of Black Grapes, and four 1st prizes for Apples and Pears.

The vegetable classes were well contested. For a collection of six distinct kinds, confined to gardeners, T. Clarke, Esq., was awarded the 1st prize. The "Farmers' Challenge Cup," presented by Mrs. Neil Gossage for a similar collection, was taken by Mr. James Gore, Halewood.

ABERDEEN CHRYSANTHEMUM.

NOVEMBER 22, 23.—The annual exhibition of this society was held on these dates in the Music Hall Buildings, Aberdeen. Compared with last year's show, the entries were slightly fewer, but collectively the exhibits formed a good, all-round display, and there was noticed an absence of inferior flowers. The opening ceremony was performed by Dr. Marshal Lang, C.V.O., Principal of Aberdeen University.

Cut blooms.—The classes devoted to cut blooms formed the leading feature of the exhibition. The most important competition was for a handsome silver challenge cup, offered by the president and patrons of the society to the exhibitor of the best twelve vases of Japanese Chrysanthemums, three blooms of one variety in a vase. GEORGE KEITH, Esq., of Usan, Montrose (gr. Mr. Andrew Hutton), who had already won the cup twice, beat all other competitors. His marks totalled 106, including 11 for grand specimens of F. S. Vallis. Other varieties worthy of note in the premier collection were R. Vallis, Mrs. A. T. Miller, and Miss O. Miller. The 2nd place went to the Countess of Seafield, Cullen House (gr. Mr. Morton), whose exhibit was only slightly inferior to Mr. Keith's. This collection included some superb blooms, especially an exquisitely-grown specimen of Mrs. A. T. Miller, which was given the prize offered for the best bloom in the show, and also that for the largest bloom in the show. 3rd, Mr. W. Paterson, Balmadie Gardens, Aberdeenshire. Mr. Hutton also gained chief honours for the best 24 blooms of Japanese Chrysanthemums, in not fewer than 12 varieties, with a particularly fine collection, and several other prizes.

In the class for nine varieties of Japanese Chrysanthemums, Mr. James Jenkins, Woodside, Aberdeen, was awarded the 1st prize with an exquisite display. This exhibitor also took

1st place for single white blooms. The Duke of Somerset, Burton Hall, Lincoln (gr. Mr. George Jamieson), was placed 1st in the class for Incurved blooms, his flowers being much admired. He also took the prize offered for the best incurved bloom in the show with a superb specimen of C. H. Curtis. Amongst other growers who took leading places in the cut-flower section were Mr. Jenkins, Woodside; Mr. A. Oliphant, The Links, Montrose; Mr. William Milne, Corsindae House; and Mr. Alex. Douglas, Kepplestone House, Aberdeen.

Plants.—This section was the weakest part of the show. The entries were fewer than those of last year, and the quality was not quite so good. Mr. A. Douglas (gr. to Mr. Ogilvie, Kepplestone House, Aberdeen) was the only exhibitor of a group of Chrysanthemums arranged for effect.

Fruit and vegetables made a good display, and especially Apples. Some capital specimens of this fruit were shown by Mr. R. Singer, Firlands, Forres; Mr. William Reid, Corsindae House; and Mr. J. Robertson, Letham Grange, Montrose. Mr. Andrew Reid, Durris House Gardens, and Mr. Robertson, Letham Grange Gardens, won the principal prizes for Grapes.

There were no fewer than eight entries in a class for a collection of vegetables. Messrs. J. and D. Mackenzie, Bucksburn, Aberdeen, won the 1st prize, followed by Mr. Lawson, Oakbank, Aberdeen.

Non-competitive displays were made by Messrs. W. Wells & Sons; Mr. W. A. Dustan, Aberdeen; Messrs. G. Bunyard & Co., Ltd., Maidstone, Kent; and Mr. J. Robertson, Hadden Street, Aberdeen.

NATIONAL DAHLIA.

NOVEMBER 26.—A meeting of the Committee was held at the Hotel Windsor, Westminster, on the above date. Mr. E. Mawley presided. The committee received with deep regret the resignation of Mr. H. L. Brousson from the office of secretary, which he had held for two years with great benefit to the society. The vacancy was filled pending confirmation by the annual general meeting in December, by the appointment of Mr. H. H. Thomas, editor of the *Gardener*. Considerable discussion followed with respect to the financial state of the society, which, if the contribution from the Crystal Palace Co. was paid, would be very satisfactory. Mr. Mawley said that since the formation of the society it had been favoured with five previous secretaries in Messrs. Glasscock, Girdlestone, Hudson, Tulloch, and Brousson, all gentlemen deeply interested in the Dahlia and most desirous of promoting its wider culture. Without doubt the present position of the society, with its 230 members, was largely due to the active work of these gentlemen and to their esteemed treasurer, Mr. Wilkins. But specially was it due to the introduction of the Cactus Dahlia, which had become so remarkably popular. Still, he thought the time had arrived when something more should be done to make that popularity wider, and he specially wished to see a section of Cactus Dahlias apart from exhibition varieties that were to be promoted for garden decoration. The new Pæony-flowered forms, no doubt, had in them a great future, and merited wide cultivation. Again, single Dahlias, the special favourites of the late Mr. Girdlestone, were very beautiful as garden flowers. Any new developments in Dahlias which presented themselves were worthy of all consideration and development.

He proceeded to refer to the places for exhibition open to the society, and in doing so made passing and kindly reference to the London Dahlia Union, which invariably held its show at a later date than the society did; hence there was no clashing, and only the most friendly arrangement. The committees were in each case almost of the same persons. Arising out of the chairman's reference to places for exhibition much discussion followed, some members favouring the retention of the shows at the Crystal Palace, and others being desirous of holding them in London. No doubt some definite decision will be announced at the coming annual meeting. The schedule of competitive classes for the ensuing year was considered.

LINNEAN SOCIETY.

NOVEMBER 21.—A meeting was held on the above date.

Mr. G. C. Druce showed dried specimens of *Linaria arenaria* DC., which he had gathered near Barnstaple this autumn, but which had no pretension to be native, as it had been sown there 15 years earlier. Further, he exhibited herbarium specimens of *Leontodon hirtus* var. *Pristis*, G. C. Druce, from Guernsey and Alderney, and *Picris hieracioides* var. *incana*, G. C. Druce, from the latter island.

The first paper was by Mr. W. C. Worsdell, F.L.S., on "Abnormal Structures in Leaves and their Value in Morphology." He stated that there are no real "freaks" in nature, because all so-called "sports" are reproduced in one form or another as normal structures in other parts of the vegetable kingdom. The great majority of abnormalities represent *reversion*, or attempts at reversion, to an ancestral structure.

The last paper, by Mr. J. G. Otto Tepper, F.L.S., on "The Preservation of Specimens in Australian Museums," was read in title. The author based his remarks on Prof. A. J. Ewart's paper in the *Journal of Zoology*, vol. xxx., pp. 1-5, on *Anthrenus musæorum*, and pointed out that the life-cycle of this insect involved visits to flowers, and that the presence of their destructive larvæ in collections was due to the eggs being laid in proximity to the cases, and the active and minute larvæ subsequently finding their way into the containing cases, by cracks or similar apertures.

BRITISH GARDENERS' ASSOCIATION.

A MEETING convened by the Leeds branch of this association was held on the first day of the Chrysanthemum Show in a room adjoining the Exhibition Hall. All gardeners from the neighbourhood were invited to attend. A considerable number were present, including Mr. J. Campbell, Methley Park Gardens, who presided, and Mr. G. Carver, the branch secretary. After a brief statement by the chairman, a letter was read from Mr. G. Hemming, of the Alexandra Palace, London, who was for many years an ardent worker in Leeds, introducing the delegate, Mr. E. F. Hawes, of the Royal Botanic Gardens, Regent's Park, a member of the executive council. Mr. E. F. Hawes traced the progress of the association from its formation up to the present time. After the address, a discussion ensued, the speeches showing that a keen interest in the association exists amongst Leeds gardeners.

DEBATING SOCIETIES.

REDHILL, REIGATE AND DISTRICT GARDENERS'.—At a recent meeting of this association, Mr. E. Salmon, F.L.S., Wye College, gave a lecture, illustrated by lantern slides, on "Fungoid Diseases." G. P. S.

GUILDFORD AND DISTRICT GARDENERS'.—A meeting of this association was held on Tuesday, November 19, when Mr. H. Tann presided over a moderate attendance of members. Mr. W. Goodwin, of the South Eastern Agricultural College, Wye, delivered a lecture on "Manures." The lecturer dealt principally with nitrogenous manures, including nitrate of soda, nitrate of potash, and sulphate of ammonia. Lime is of the utmost importance in the soil, as, by its agency, acidity is corrected, the development of bacteria is favoured, &c.

CROYDON AND DISTRICT HORTICULTURAL.—The meeting held on November 19 was devoted to microscopical studies. Under the guidance of Mr. J. Gregory, classes have been held during the past year, and those members attending were able to exhibit the progress they had made in giving demonstrations to interest their fellow gardeners.

BECKENHAM HORTICULTURAL.—At the meeting held on Friday, November 22, a lecture on "Rose Culture" was given by Mr. T. Burch, of Peterborough. The lecturer stated that November was the best month for planting Roses. Newly-planted trees should not be hard pruned the first year. Hybrid Tea and Perpetual Roses should be pruned in the third week in March, and "Teas" in the first week in April. All climbing Roses should have their growths trained upright, for if the shoots are allowed to hang down the growth is checked. A good specific for ridding Roses of green fly and mildew can be made with half a bar of Lifebuoy Soap dissolved in three gallons of water. T. C.

DEVON AND EXETER GARDENERS'.—Mr. J. Weeks, gardener to Mrs. Sanders, Stoke House, read at the last fortnightly meeting a paper on the "Fibrous-rooted Begonia." The lecturer related the history of this plant, and dealt in a practical manner with its cultivation. A. H.

Obituary.

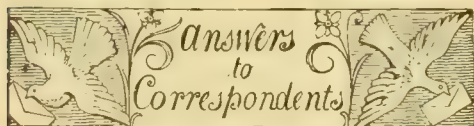
HARRY GILLET. We regret to have to record the death on the 20th inst. of Mr. Harry Gillett, secretary of the Cardiff and County Horticultural Society, and of the Cardiff and District Chrysanthemum Society. Mr. Gillett settled in Cardiff 20 years ago, and was one of the founders of the Horticultural Society which was formed in the following year. Those who have any knowledge of the Cardiff show will likewise know that much of its success has been due to the tact and energy of the late secretary. Deceased passed away suddenly, after supper, from an affection of the heart.

RICHARD LEES.—The death took place on the 19th inst. of Mr. Richard Lees, who for a considerable number of years has occupied the position of gardener to Lord Dunraven, at Kenry House, Kingston Hill. A Scotsman by birth, Mr. Lees was a man of amiable disposition, and what work of a semi-public nature he undertook was done in a quiet, unostentatious manner.

WILLIAM UNWIN.—The death occurred recently of Mr. William Unwin, a well-known commission agent in the Covent Garden fruit market.

THE SPARROW IN NEW SOUTH WALES.

The sparrow has few friends, but he is so wily that he has but little to fear from his foes. The latest lament on his powers of devastation comes from Australia, where, according to the *Agricultural Gazette*, his predatory habits, coupled with his application to himself of the charge to "replenish the earth and subdue it," is causing the gravest apprehension. Grapes, Figs, and other fruits are attacked before they are ripe, and even if they are protected the little brown bird vies with the rat in the cleverness with which he extracts what he wants, in complete defiance of traps and nets. The matter is getting so serious that the need of a conference is urged in order to discuss the situation, and to devise remedial measures that can be tried with some hope of success.



ADIANTUM CUNEATUM FOR MARKET: *J. C.* There is no absolute rule in regard to the number of fronds forming a market bunch of this Fern, but in the case of the best fronds it is usual to place about one dozen leaves in each bunch. There may be two dozen fronds in the bunches composed of smaller fronds. In packing flowers or fruit for market, proper grading is of the utmost importance. All buyers prefer samples of equal quality throughout.

BASIC SLAG AS A MANURE: *G. S.* You will find a reply to your query in the issue for February 17, 1906, p. 112.

BEGONIAS: *A. C.* If you will send us a few leaves they shall be examined.

CHRYSANTHEMUMS FOR MARKET: *J. C.* There are three distinct grades of Chrysanthemums sold in Covent Garden market. The large specimen blooms are packed singly without bunching. These are not always of the very finest exhibition type, but they are well-grown blooms, and have been disbudded. The next grade are those in bunches of 12 blooms, which have also been disbudded. These vary somewhat in size, and some growers place only six of the best blooms in one bunch. The next grade includes those flowers grown naturally and without disbudding. Most market growers place 12 sprays of these blooms in each bunch, but there is no absolute rule. Sometimes 18 or 24 of the smaller sprays constitute a bunch, but in the case of the larger inflorescences from 8 to 10 may form a bunch.

GRAPE Anaxim, Nottingham, D.C. The fruit is not in a sufficiently good condition to be judged definitely. You should have sent it

earlier. All we can say in the circumstances is that it appears to us as a form of Muscat of Alexandria. The slight differences you have observed are such as are sometimes produced by grafting upon a different stock, but this may not be the case in your instance.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers.*

FRUITS: *E. W., Stansted.* 1, Marie Louise; 2, Gansel's Bergamot; 3, St. Edmunds; 4, Beurré Diel; 5, Ribston Pippin; 6, Belle Dubois.—*St. John Achers.* King of the Pippins.—*J. C. Van Mons. Léon Leclerc.*—*Chewton.* a, White Nonpareil; b, Beurré Diel; c, Chaumontel.—*Minchhead* (no letter). 1, Scarlet Leadington; 2, The Queen.—*G. M.* The Apple is a very fine fruit of Annie Elizabeth.

PLANTS: *E. B.* Escallonia floribunda, syn. *E. monteydensis.*—*T. R. Y.* 1, Pholidota chinensis; 2, Odontoglossum Lindleyanum; 3, Odontoglossum blandum; 4, Bulbophyllum auricomum; 5, Masdevallia simulata; 6, Pleurothallis conanthera.—*J. B.* Oncidium abortivum. The other flower sent is not recognised; kindly send a better specimen.—*J. F.* Hieracium aurantiacum.—*S. R. D.* 1, Cupressus Lawsoniana; 2, Juniperus sp.; 3, Juniperus chinensis; 4, Thuya orientalis var. aurea; 5, Pernettya mucronata; 6, P. m. var. angustifolia.

NARCISSUS AND HYACINTHS FOR EXHIBITION:

Narciss. You should have potted the bulbs earlier; further delay would only defeat the object in view. The late planting of bulbs generally results in the plants failing to develop to their proper stature. In the case of the Hyacinth, where many flowers are arranged in one spike, the uppermost flowers do not finish well, hence a weak point is presented to the judges. How long such bulbs may safely be kept in the dry state depends to a considerable extent upon the conditions of storage. There is an idea abroad that late-planting is conducive to success, but this is not so, and success is dependent to a far greater extent upon the subsequent treatment. The plant that in its more natural season is given the opportunity of developing its root-fibres has decided advantages over those planted later, and another season you should bear this in mind. The exhibition being fixed for April, it will be held in the proper season for the flowering of such species, and your anxiety has no justification. The soil for Narcissus and Hyacinths should be composed of good loam three parts, the remaining part being made up of silver sand, leaf-mould, and decayed manure in equal parts. A small addition of any reliable artificial manure or bone meal should be added. If the bulbs are to be exhibited in pots, the manner they should be arranged will depend entirely upon the conditions stated in the schedule issued by the society under whose auspices you intend to exhibit. Pot the bulbs quite firmly, just burying the Narcissus from view, while keeping the crown point of the Hyacinths level with the rim of the pot. Following the planting, apply a thorough watering, and repeat the application when the first has drained away, so that the soil will be well moistened throughout. On the same or the following day stand the entire batch on a well-drained ash-bed, and, preferably, against a north wall for shelter. A covering not less than 4 inches deep—6 inches would be better—of coal-ash or sand should be given, first covering each of the Hyacinth bulbs with an inverted 3-inch pot to prevent injury to the top of the spike by contact with the plunging material. Thus treated, the bulbs will be safe without atten-

tion for six weeks to come. At the expiration of that time an examination should take place, and if the soil is found to be dry, let an application of water be given. It will not be very dry, of course, but as both of these bulbous plants are moisture-loving to a degree rarely appreciated, water should be afforded them whilst the soil is still moist. At a later period a further examination should take place, and the inverted pots and the ashes removed, replacing the former by larger pots and the latter by a covering of litter. The subsequent treatment should consist of affording abundance of water and occasional doses of liquid manure, putting the plants into a darkened, cold frame for a time, and ultimately exposing them in a cold or slightly warmed greenhouse or frame to ensure the plants being at their best on the show day. As we do not know the kinds of Narcissus you are growing, we cannot give more definite instructions. See also the article on p. 369.

PLANTS FOR A WET BORDER: *Narciss.* You do not state the width or length of the border, and, therefore, we cannot advise you definitely. There are, however, a large number of plants well suited for cultivation in very wet situations, and of these special mention may be made of *Monarda didyma*, *Narcissus*, *Emperor*, *N. Empress*, *N. poeticus*, the May-flowering form, *N. p. fl. pl.*, which is a capital plant for such places, and many others. *Leucolum æstivum*, *Colchicums* (such as *C. speciosum* and *C. autumnale* varieties), *Crinum Powellii* and *C. longiflorum* are very suitable. Such *Astilbes* or *Spiræas* as *S. palmata*, *S. venusta*, *S. aruncus*, and others make grand specimens, and to these could be added *Iris sibirica* in variety, *I. lævigata*, of sorts, *I. Pseudacorus*, fol. var., *I. aurea*, and *I. Monnieri*, *Trollius* in many sorts, *Primulas* as *P. japonica*, *P. rosea*, *P. cashmeriana*, *P. Sieboldii* in variety; *Lythrams*, *Epilobiums*, *Dodecatheons*, *Hepaticas*, the taller *Thalictrums*, and others are perfectly at home in wet soils. If given frequent attention, many herbaceous *Phloxes* and some *Michaelmas Daisies* would also prove a success.

RECORD CARROTS: *H. S.* Your friend's example, weighing 2 lbs. 3 oz. is a large root, but it scarcely approaches in size those in our "Record Book" under dates 1858, 1859, both of which turned the scale at 10 lbs. The measurement of one of these is given at 20 x 39 inches. See *Gardeners' Chronicle*, February 13, 1858, p. 111. This Carrot is said to have been produced in America, at Sacramento City.

RENOVATING A VINE BORDER: *W. L.* Carefully remove the old soil from the roots, taking care not to break the smaller root-fibres in the operation, and when a trench has been opened ascertain if the drainage is in a suitable condition. If this needs attention, let the work of re-making the drainage be done in a thorough manner, and when put straight again, fill in with a compost made up of good fibrous loam, some old lime-rubble or broken bricks, charcoal, wood-ashes, or burnt soil, and a liberal quantity of fine bone manure. These ingredients should be well mixed together. If the roots are accommodated in inside and outside borders, renew the inside border this year, and after the lapse of one or more seasons apply the same treatment to the other.

WAGES DURING ILLNESS: *Interrogavi & Macintosh.* A servant is entitled to his full wages during a period of temporary illness, although the master has to employ someone else to do his work. The master may, if he pleases, put an end to his liability to pay the wages of a disabled servant by giving him the customary notice required in that class of work in which the servant is employed, but unless such notice is given the liability continues. The fact that sick pay is given by a Benefit Society does not affect the point.

COMMUNICATIONS RECEIVED.—*W. W. D. and S.* (We cannot insert paragraphs in the editorial columns at the request of advertising agents.)—*A. J. F.* (thanks for 2s. for the R.G.O.F. box.)—*W. B.*—*L. H.*—*E. A.* (Cambridge)—*W. W. P.*—*W. G. S.*—*L. G.*—*J. A.*—*W. N. W.*—*W. W.*—*S. A.*—*W. I.*—*R. B.*—*E. M.*—*J. D.*—*J. S. B.*—*J. D. G.*—*G. H. H.*—*E. J. A.*—*T. G.*—*G. B.*—*H. T.* & Co.—*F. M.*—*Mrs. H.*—*A. C.*—*G. H.*—*E. F. W.*—*G. D.*—*H. A. M.*—*T. S.*—*A. P.*—*F. N.*—*J. T. S.*

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THE Gardeners' Chronicle

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SEED AND SOIL INOCULATION.

THE discovery during recent years of the important part played by certain bacteria found in the soil, in maintaining soil fertility and promoting plant growth has directed the attention of all up-to-date horticulturists to the immense possibilities to be found in the application of bacteriology, the most recent of the biological sciences, to the oldest pursuit of the human race.

Among the many different kinds of invisible life incessantly at work below the surface of the soil in fields and gardens, the group of nitrogen-fixing bacteria are of special importance in view of the limited amount of combined nitrogen found in the soil. The nitrogen naturally in the soil is contained chiefly in the organic matter present. The processes of decomposition and denitrification tend to reduce this stock of combined nitrogen by liberating it and setting it free as gaseous nitrogen. So serious is this loss that Sir William Crookes, at the meeting of the British Association in 1898, predicted a nitrogen famine within fifty years, and quite recently Prof. Sylvanus Thompson has stated that the existing sources of combined nitrogen will be exhausted in ten years.

And yet in the atmosphere around us there is practically an unlimited supply of this valuable food element nitrogen in an uncombined state. It is estimated that there are



FIG. 157.—BACTERIA-NODULES, OR TUBERCLES, ON THE ROOTS OF A LEGUMINOUS PLANT.

75,000,000 lbs. of atmospheric nitrogen above every acre of land of the earth's surface. If this free nitrogen could be combined into the form in which it exists in nitrate of soda, it would represent a value of £2,000,000 of nitrogen over every acre. Unfortunately the majority of plants are not able to avail themselves of this supply. Recently a certain amount of this free nitrogen has been rendered available by electrical methods, and the commercial production of what is known as lime nitrogen has allayed all fears of a nitrogen famine, but the process is an expensive one, and the product almost as dear as nitrate of soda.



FIG. 158.—BACTERIA FOUND IN THE NODULES ON THE ROOTS OF LEGUMINOUS PLANTS.

Fortunately Nature has a method of her own for tapping the treasure of the air, and has shown us how, by means of her wonder-

working bacteria, it is possible to obtain practically unlimited quantities of nitrogen from the air for the use of plant life at a very small cost. These bacteria live in the nodules or tubercles which are found upon the roots of all leguminous plants—Peas, Beans, Clover, Lucerne, &c.—and there multiply and absorb the free nitrogen from the air, and cause it to unite with other elements to form compounds which are suitable for plant food.

Centuries ago, Pliny, writing on agriculture, stated that leguminous or pod-bearing plants supplied manurial material to the soil as effectively as farm-yard manure; and in other ancient writings on agriculture many references are found as to the necessity for including some leguminous crop in the regular rotation.

The exact meaning of this was not understood until quite recent times, when in 1886 Hellriegel, in Germany, and Marshall Ward, in this country, demonstrated that the nodules which are found on the roots of leguminous



FIG. 159.—PEA PLANTS; THE LARGER ONE WAS INOCULATED WITH THE BACTERIA.

plants contain colonies of bacteria which have the power of absorbing the nitrogen gas of the atmosphere and rendering it available as plant food, and the more numerous the nodules the more vigorous are the plants owing to the increased amount of nitrogen absorbed. In 1888 Beyerinck found it possible to obtain pure cultures of these bacteria on artificial media, and in 1890 Prazmowski succeeded in inoculating the roots of Bean plants growing in sterilised soils, and obtaining luxuriant growth by simply watering the plants with a liquid culture of the bacteria.

At this stage Prof. Nobbe took up the work, and showed that by applying pure cultures of certain bacteria to certain crops an increase in root nodules resulted, and also an increase in the yield of the crop. He isolated the organisms from the nodules of a number of leguminous plants, made a culture

of them in nutrient gelatine, and sold them under the trade name "Nitragin." Unfortunately, nitragin did not prove a success. In a certain number of cases satisfactory results were obtained from its use, but eventually the proportion of failures was so numerous that its manufacture was given up. The difficulty appeared to be in preparing cultures of the right virulence which would not deteriorate during transit. His theory of inoculation was sound, but he had not hit upon the correct method of application.

Little more was done at this subject until 1901, when the United States Department of Agriculture commenced "a scientific investigation of the root-nodule organism, with a view to making practicable for use in the United States the pure-culture method of inoculation." It was soon found why Nobbe's methods of culture and distribution were so uncertain in their results. Nobbe's bacteria being cultivated in gelatine naturally preferred to feed on the combined nitrogen of the gelatine rather than fix the free nitrogen of the atmosphere, and thus, not being obliged to work for their living, as it were, they became lazy and inactive, and lost their virulence. The American scientists cultivated their bacteria in solutions free from organic nitrogen, and demonstrated that by this means the nitrogen-fixing power of the organisms was increased. That is, they became very active and virulent. It was also demonstrated that the bacteria, when dried on cotton wool in this condition, could be easily distributed.

During 1903 and 1904 over 12,000 packages of inoculating material were sent out free by the Department of Agriculture to farmers in the various States. In January, 1905, a report of the results obtained was published, which showed that 74 per cent. of the trials were successful. The most astonishing results were received from poor soil districts. One report states that "worthless, barren ground, literally too poor to grow weeds, has been inoculated and made to produce crops four times as large as those taken from average uninoculated soils. Scores of abandoned farms have been reclaimed simply by inoculating the soils." W. B. Bottomley.

(To be continued.)

NOTICES OF BOOKS.

*THE BOOK OF WATER GARDENING.

THIS book gives in detail the practical information necessary to the selection, grouping, and cultivation of aquatic and waterside plants. It covers all conditions, from those of the amateur with but a few plants in tubs, to those prevailing in a large estate or park. It contains 198 pages, and it is profusely illustrated with some 120 halftones, many diagrams, and two double-page plates.

Upon even a cursory glance one is disposed to envy the luxuriance of the tropical and semi-tropical vegetation illustrated in such detail and variety; but upon closer scrutiny it makes one marvel at the results that have been accomplished in America in the growth of the choicest forms of aquatic plants. We in England cannot hope to equal, much less to surpass, the results that they have accomplished in the culture of the tropical, semi-tropical, and the partially tender plants which seem to revel under the

clearer skies and warmer summers with which they are favoured. With the hardy Nymphæas it may perhaps be said that we are able to produce good effects.

The plates illustrate many beautiful and artistic effects such as can be achieved here only under glass. Some of the most charming plates in this work are as follow:—An Amateur's Water Garden, illustrating the Nelumbium, the night-blooming Nymphæas, as well as some of Mariac's choicest hybrids, with Eichornia crassipes and suitable surroundings. Another one, which portrays Victoria regia, Musa, and Nelumbium, forms a striking picture.

Turning to gardens of larger pretensions, there is an illustration of the water garden at Twin Oaks, Washington, the home of Mrs. Gardiner G. Hubbard. This is remarkable by reason of the surrounding vegetation, even more perhaps than by the water effect itself which is somewhat too flat; but the Water Lilies are luxuriating to a wonderful degree. In this picture the importance of a screen is clearly denoted. One plate illustrates the Victoria regia growing without artificial heat, and it is evidently quite at home. Illustration and suggestive diagrams are given of pools, basins, and the like for the culture of water plants. One, on a large scale, might well be adopted in the more important gardens in this country, especially in public gardens. Some of these are shown with heating arrangements and some without them. It is a comparatively easy matter, even in this country, to cultivate the tropical Nymphæas in heated houses, more could certainly be done by us in this direction. Several plates are occupied with single specimens of the tropical and the hardy Nymphæas. Those who are familiar with these will readily recognise many of the varieties, and those who are not so well acquainted with the diversity that exists amongst them might obtain much useful information by a careful perusal of its pages.

In the letterpress will be found instructive information upon the problems that arise from the first conception or creation of a water garden up to its complete finish. The importance of shelter, already alluded to, is clearly demonstrated, and lists of suitable plants are given. The work connected with the making of ponds, the compost for the plants, the planting in the pond, or in boxes or tubs, is all fully described. Selections of the best Water Lilies and miscellaneous aquatic plants for cultivation by beginners are given, and appropriate plants are enumerated for planting at the margins and on the surroundings of the water. The propagation of Water Lilies is described and illustrated. Insects, diseases, and other enemies are treated of clearly. The book is written in a most interesting and attractive fashion. As the author states in the preface: "It is a heart-to-heart talk, devoid of literary pretension, with those of kindred tastes to my own." It is a work that can be confidently recommended, and even if one has no ambition to enter upon the culture of aquatic plants, it will afford instructive reading. But to those who wish to enter upon or extend their cultivation of such species, it will be indispensable. Jas. Hudson.

*GARDENING IN TOWN AND SUBURB.

We think that, in spite of the great number of books treating of gardening in its various phases, there is room for this latest addition to them. It is chiefly intended for the instruction of the amateur who may be the possessor of a garden in the suburb or more open part of a large town, and may give him a lead on subjects of which he may have but a small amount of knowledge, although he may yet have ideals. The author commences, as a practical man should do, by giving the more necessary details of laying out a garden which has a border of herbaceous plants as its chief feature.

A select list is given of suitable plants that will make the border gay with flowers from winter to the end of autumn.

Roses—an inexhaustible subject—are naturally conceded a large space in the book, the best methods of pruning the various classes being pretty fully explained, and a sufficiently long list of the varieties afforded.

Carnations and Pinks, good town plants, including Border, Perpetual, and "Malmaison" Carnations, Laced Pinks, and the so-called Border Pinks, Chinese or Indian (*Dianthus chinensis*), &c., have a chapter to themselves, together with useful information in regard to propagation. Lilies and bulbous plants are enumerated and species indicated. Considerable stress is laid on the uses of annuals, and a fairly comprehensive list is given of these. We miss the fragrant *Clematis flammula* from the list of climbing plants—a favourite with everyone for its masses of white blossoms, that are produced on the plant in almost any kind of soil. Everyone who has remarked the dirty appearance of the foliage of evergreens in towns will agree with the author in his preference for hardy deciduous shrubs. He should have included the beautiful *Forsythias* and such hardy *Fuchsias* as *Riccartonii* and *globosa*; also such fragrant plants as *Rosemary*, *Lavender*, and the "Old Man" (*Artemisia*), *Sweet Verbena*, and *Lemon Thyme*. "Tub" gardening and roof gardens each receive a word of commendation. Fruit trees as covering for walls, and as cordons and bushes are noted, and suitable kinds are enumerated; but that capital variety of Pear that fruits freely about London, the *Chaumontel*, is not included in the list. The *Greengage Plum* is another that fruits freely and is omitted.

Many amateurs will be glad of the chapter on bulbs planted in "fibre." There is useful information afforded on the culture of plants in warm and cold greenhouses and unheated frames; on the cultivation of the Grape vine in a greenhouse, and of plant culture in window boxes, and in apartments. In connection with this last-mentioned subject, there are some pertinent remarks on the proper affording of water to the plants, a matter of much difficulty to many amateurs.

ORCHID NOTES AND GLEANINGS.

LISTROSTACHYS VESICATA.

THIS very singular species from West Africa is flowering with the Hon. Walter Rothschild, at Tring Park, and although the flowers are small, their structure and arrangement are very curious. The plant produces long spikes of small greenish-white flowers, a few at the base being arranged so closely together as to appear to be in pairs, the remainder, to the number of about 100, being arranged alternately and in opposite rows. Lindley, in *Bot. Reg.*, 29 (1843), Misc., p. 6, under *Angræcum vesicatum*, remarks: "From the Ashantee country, whence it was obtained by Messrs. Loddiges. It bears white, inconspicuous flowers, whose spurs look like a horn with a semi-transparent bladder at the end." The bladder alluded to is nearly as large as the flower, and gives it a very quaint appearance.

DENDROBIUM NUDUM.

A FINE specimen of this extremely rare and little-known Javan species has flowered with the Hon. Walter Rothschild. The plant resembles a slender *D. fimbriatum*, and the flowers, which are produced in succession for a considerable time, are in fascicles of two or three; each flower is about the size of the *D. fimbriatum* alluded to, but totally different in structure, the large and stout mentum, which forms the lower part, being very conspicuous. The flowers are yellow with a nankeen shade, and there are purple markings on the lip. Mr. R. A. Rolfe makes the *D. aurorseum* of Rehb. f., in *Bonplandia*, a synonym of this *D. nudum*, Lindl. *Gen. et sp. Orch.*, 85.

* *The Book of Water Gardening*, by Peter Bisset. New York: A. T. de la Mare Printing and Publishing Co., Ltd., 1907.

* By Harry H. Thomas. Longmans, Green & Co., 39, Paternoster Row, London; price 2s. 6d. net. Crown 8vo.; illustrated.

BULBOPHYLLUM PAVIMENTATUM.

To lovers of *Bulbophyllum* this charming little plant should appeal very strongly, for it is neat in habit and produces its brightly-coloured flowers in profusion. A plant now in flower at Tring Park, on a specimen obtained by the Hon. Walter Rothschild from Nigeria, has eight spikes, and more are appearing. The slender, arching stems bear sprays of closely arranged crimson flowers, the bases of the petals being white and the fleshy lip furnished with rows of hair-like processes. It was originally found by Mann on the banks of the Nun River, where it is reported that the ground in places is "closely paved with the pseudo-bulbs of this species."

ODONTOGLOSSUM GRANDE.

THE plant of *Odontoglossum grande* illustrated at fig. 160 is in the collection of J. Oakshott, Esq., Oaklands, Lower Bebington, Birkenhead, whose gardener, Mr. Findlow, obligingly forwarded us the photograph. The specimen is growing in a pot 10½ inches in diameter, and it recently bore 55 fully-developed flowers. We give the following extract from Mr. Findlow's letter:—

"Our plants of *Odontoglossum grande* are placed at the warmest end of the cool house. They were formerly accommodated in the intermediate house during their growing season, but we find they succeed equally well if they are allowed to remain in the cool house all the year through. During the season of growth, occasional applications of weak manure water are given. The staging about the pots is damped occasionally with soot water. This species requires rather more light during the summer-time than *O. crispum*, and they are afforded ventilation whenever possible. When the flowering period is over, the plants are kept fairly moist for a few weeks, in order to encourage them to develop stout pseudo-bulbs. The amount of moisture supplied to the roots is then gradually decreased, but they are never allowed to become sufficiently dry to cause the pseudo-bulbs to shrivel. The rooting medium is the ordinary compost used for *Odontoglossums*, viz., chopped peat and sphagnum moss (no leaves), and a good sprinkling of finely-crushed crocks. *O. grande* has a reputation for losing its vigour, but the plants in these gardens improve each year. Several of the growths developed three flower-spikes this season, and some had nine perfect flowers on one spike."

CHRYSANthemum NOTES.**CHRYSANthemum F. S. VALLIS.**

THIS year in Paris F. S. Vallis was shown in splendid form. M. G. Truffaut had 300 colossal blooms of it in a single exhibit, and M. Dubuisson-Foubert also staged an enormous vase filled with grand examples. For the special prize offered for the finest and largest flower in the show, F. S. Vallis, shown by M. Dubuisson-Foubert, was an easy 1st. From tip to tip it measured 40 centimetres (16 inches). The best bloom shown by him last year was 48 centimetres in diameter. The variety was distributed by M. Calvat in 1902.

AMERICAN VARIETIES.

THE varieties which came to England in such numbers less than 20 years ago and many of which were so frequently exhibited at the English and French shows, are rapidly disappearing. It is curious that no effort is being or has been made by American growers to send their novelties, but the fact remains that for a long time past we have had but few additions to our collections from the other side of the Atlantic.

After visiting the London parks, the trade shows, and the English and French exhibitions, I have only noted the names of the following survivors of the American-raised varieties, viz.: W. Tricker (bright rosy-pink), Hairy Wonder,

Delaware (Anemone), Simplicity (white Japanese), Mrs. E. G. Hill (a big early pink), Modestum, E. W. Childs, Mrs. Judge Benedict (Anemone), Good Gracious (a most distinct, whorled variety), Louis Boehmer (hairy), Mutual Friend, Col. W. B. Smith, and W. Falconer (hairy).

CHRYSANthemum MME. PAOLO RADAELLI.

THIS is a grand flower wherever grown, and a fine specimen of it was awarded 2nd prize at the Paris Show in the class for the biggest bloom in the show. Not long ago it threw a fine yellow sport which was distributed under the name of Mme. G. Rivol, which has been seen this season in good form. Another new sport has now appeared. It bears the name of Mlle. Marthe Raffard; the colour is reddish-buff or chamais, and it resembles its parent in every other respect.

EARLY CHRYSANthemums.

AT the recent Paris Show, M. Aug. Nonin staged a nice collection of new large-flowering early varieties, but before these can be tried in England his novelties of last year will probably have to be distributed. These have been described by a well-known English trade grower

thronged the Paris Show, especially during the afternoons and evenings, were an object-lesson. Looking over my notes, I am inclined to think that the following may justly be described as the most popular show flowers, the selection being taken both from the classes for plants, and from those for cut flowers: Baronne Vinols is a charming decorative variety plentifully used as a border or edging for big groups in conjunction with a little yellow dwarf-growing Pompon called Gerbe d'Or. Baronne Vinols is a pretty shade of pinkish-amaranth or purple, with white tips. It is incorrectly known in this country as Caprice du Printemps. There are probably half-a-dozen sports from it, but none to my taste are so effective as the parent. Tokio is a grand thing for specimen plants—a stiff petalled, pale pink Japanese. In large blooms, Duchesse d'Orleans, W. R. Church, F. S. Vallis (superb), Mme. Paolo Radaelli (always fine), F. Pilon, Mme. René Oberthür, Sapho, W. Duckham, Naples (not large but very effective), Alexis Dessarps (a fine yellow, hairy flower), Mr. T. Carrington, Mrs. Coombes, President Viger, Mme. Nagelnakers, Marquise Visconti-Venosta, Souvenir de Bailleul, La Gracieuse, Princess Alice de Monaco, Mrs. Barkley, E. J. Brooks, M. Loisseau-Rousseau, General Hutton, Le Bou-



FIG. 160.—PLANT OF *ODONTOGLOSSUM GRANDE* WITH 55 EXPANDED FLOWERS.

as the best lot M. Nonin has ever sent out, and, indeed, in this section of early-flowering varieties M. Nonin seems to be one of the most capable growers on the other side of the Channel. They are mostly medium-sized, useful little Japanese varieties, produced on bushy, dwarf plants eminently suitable for the open ground. They are all very free-flowering, and are first-class amateurs' plants where a display, or blooms for cutting are required. They begin to flower in September or October.

SOME POPULAR CHRYSANthemums IN FRANCE.

WALKING round the various exhibits at the Paris and Orleans shows, no English *Chrysanthemum* grower could fail to be impressed with the large number of well-known flowers that were finely shown there. Of course many of the varieties are local, but there is no doubt that most of the good English and Australian seedlings speedily find their way across the Channel. I see there is some talk about *Chrysanthemums* losing ground here in England; it is evident that in France they have not yet reached high-water mark, for the immense crowds that

vier, Reg. Vallis, *Chrysanthémiste* Montigny, J. H. Silsbury, Miss Alice Byron, Lt.-Col. Ducroiset, and Australie. These were all remarkable blooms, and were noted in a walk round the exhibition for the purpose of ascertaining the best varieties. A few incurveds were noted, but they were, of course, greatly in the minority. Anemone-flowered varieties were non-existent. There was not a single Pompon staged, except as an edging for some of the groups. C. Harman Payne.

SINGLE-FLOWERED CHRYSANthemums.

As far back as 1886 I cultivated this section, and ever since have endeavoured to induce others to do likewise. I do not know a society now that does not include the single-flowered varieties in its prize list, even to the extent of making groups of plants almost entirely of "singles."

At no show that I have visited during the last few years has there lacked entries in these classes, but, on the contrary, in many instances as many as 10 competitors have taken their part. In addition to the above practice of displaying them for table decoration, the plants themselves

produce a distinctly pleasing effect. Associated with other foliage, and arranged in baskets, they are at once light, graceful, bright, and in every way charming.

The sprays are usually arranged in vases, the blooms being limited or not in number, and a capital effect they produce. At one time it was remarked that the colours were all too dull and sombre; there was a want of brightness that lessened the value of the flower as a decorative subject. No such charge can be made now, for there is an abundance of colour of all shades. I have no liking for those varieties with several rows of florets, which are really semi-double in character and are not nearly so effective in arrangement. This defect occurs very much in what are best known as early-flowering varieties—those capable of giving abundance of flowers in the open in October. As garden flowers there is not much objection to them, but when cutting they cannot be arranged to produce the best effect. There is a tendency in some varieties of the ordinary November-flowering sorts to become semi-double; this is a defect which I hope raisers will remedy.

The cultivation of single-flowering Chrysanthemums is very simple; an immense quantity of blossom can be produced from 9-inch pots, or even in a 7-inch pot a full-sized plant can be grown. Insert the cuttings in January, pinch the tops off them as soon as the growths are 4 inches high, and allow the resultant shoots to ramble away at will. If larger flowers are required of any particular variety, disbud the plants to the degree considered necessary, but, as a rule, the handsomest plants are obtained in specimens that have not been disbudded. Although varieties of Chrysanthemums increase in great numbers, the single-flowered varieties probably lead in this respect, as they are so easily raised, therefore the compiling of a choice selection is rendered still more difficult for those who have not any previous experience.

I have drawn up a list of two dozen desirable sorts for the guidance of the beginner:—Mrs. J. F. McLeod, probably the finest yellow variety in cultivation; Pink Beauty, rosy-pink; Lady Mayoress Sayers, rich yellow, produced in fine sprays; Felicity, white, a large reflexed flower having flat florets, a very fine variety, with a rich yellow disc; Victoria, yellow, flushed with pink and rose; Cannell's Yellow, having narrow florets, especially at the tip; Mrs. Carr Radcliffe, rosy-carmine, with a pure white inner ring next to the disc which renders this a striking variety; Framfield White, a choice late-flowering sort, which is useful; Nancy Magillcuddy, glowing crimson; Belle of Weybridge, a chestnut shade of crimson; Edith Pagam, rich pink; Bronze Edith, Pagam; reddish-bronze; G. W. Forbes, rich crimson-amaranth; Mary Anderson, pale blush; Mrs. E. Roberts, white, suffused with pink; Mrs. R. N. Parkinson, buff yellow; Mrs. H. J. Hampson, a pretty shade of fawn; Miss Irene Cragg, white, with a yellow centre; Framfield Beauty, deep, rich, velvety-crimson; Mary Richardson, reddish-salmon; F. W. Smith, rich pink; Roupel Beauty, wine red; Winnie Sherring, apricot; and Purity, white. *E. Molyneux.*

NAMING VARIETIES AT SHOWS.

It is very distressing to see the slovenly manner in which Chrysanthemums are often named at shows. Visitors to the exhibitions take an interest in noting the varieties that attract them most, with a view perhaps of adding them to their collections. In this way gardeners like to take stock of those staged, to criticise, and perhaps to find fault with the various colours, forms, and general manner of presentation. All this renders the flower the more popular, and oftentimes leads to business with the vendors of new varieties.

The common manner now in practice of naming the flowers is to write down six and sometimes 12 names on an ordinary sized envelope

or card of a similar size, and place this list of names—often badly written with a poor pencil—on the stand in front of the blooms. Exhibitors of course understand the method so generally in vogue, and know at once which name is meant for each flower. With the lady visitor, who may be a keen admirer of show Chrysanthemums, it is totally different; she cannot tell the order in which the names are placed, and too often moves on quite uninformed, and thus someone suffers, perhaps the society. Very often, too, these loose labels are brushed off the stand on to the floor by various causes, and the names are lost. It is quite an exception nowadays to find a stand of blooms labelled in a proper manner. I think societies are not severe enough in imposing penalties for such lax attention on the part of exhibitors. Seldom does one see a printed name on a neat card. Mr. Fowler Taunton set an example in naming when he was an exhibitor that has not been excelled, or even equalled. He had a wire arranged with three spaces fixed in front of his stand. Into this the three printed cards were fixed, giving the names of the three blooms behind. Visitors could tell at a glance the name of each bloom in the stand.

If executive bodies would but penalise defaulters a few times, there would soon be an improvement in the methods of labelling the flowers. *E. M.*

KEW NOTES.

GREENHOUSE, OR "NO. 4."

At this season the major portion of the floral display is obtained from Chrysanthemums. These belong, generally speaking, to the decorative and single-flowered sections, being more suitable for cultivation as bush-plants. Varieties like Source d'Or, Lady Selborne, Niveum, Ladysmith, Emily Wells, Belle of Weybridge, Earlswood Beauty, &c., have three or four flowers on a shoot. The following sorts are disbudded to one flower on a shoot; in many instances three plants are grown in a pot, on which there are 15 to 20 flowers—Vivian Morel, Charles Davis, Lady Hanham, Market Red, Soleil d'Octobre, Souvenir de Petite Amie, &c. On the side stages smaller plants are grown in 6-inch pots from cuttings rooted the end of March. Good varieties for this purpose are Soleil d'Octobre, Phœbus, Ladysmith, Ronald Ferguson, Sœur Melaine, Nellie Pockett, and Market Red. Several plants of Chrysanthemum indicum are worthy of mention, the contrast between this, one of the original species, and the other plants forming an excellent example of the work of the hybridist.

The side stages of the east wing are entirely devoted to hard-wooded plants. Various species and varieties of Erica are the most prominent at the present time. These include *E. hyemalis* and var. *alba*, *E. gracilis* and varieties, *E. caffra*, *E. melanthera*, and *E. cerinthoides coronata*. The distinct *Acacia platyptera* is one of the first species of this large genus to flower, the small globular blossoms are a rich yellow colour and freely produced. Several varieties of *Correa speciosa* are interesting; the small tubular flowers remain a long time on the plants. *Correa saligna* (syn. *C. latifolia*) has conspicuous rich pink flowers; it thrives better grafted on *Correa alba* than on its own roots. Other hard-wooded plants in flower are *Epacris*, *Platytheca galioides*, and *Rondeletia gratiissima*.

A group of the Scarlet Sage, *Salvia splendens*, associated with *Richardia Childsiana* forms perhaps the brightest feature in the house. The blue-flowered *S. azurea* var. *grandiflora* (syn. *Pitcheri*) is a useful plant at this season of the year. The plants when growing must not be stopped more than once or twice, as the best flowers are obtained from long, vigorous growths. It is better to grow three plants in

a pot if a dozen or more shoots are desired on a specimen. *Leonotis dubia* is not so brilliant in colour as the better-known *L. Leonurus*, but it is worth growing nevertheless, as being two or three months earlier in flowering. The orange-yellow heads of flowers on *Jacobinia chrysostephana* are effective; one wonders how its value for greenhouse decoration was overlooked when first introduced.

The rich blue flowers of *Dædalacanthus nervosus*, better known in gardens as *Eranthemum pulchellum*, are prominent at the warm end of the house. It is a valuable winter-flowering plant for the warm greenhouse. The plants of *Peristrophe speciosa* are freely sprinkled with the reddish-purple flowers. *Chironia linoides* (syn. *C. ixifera*) lasts in flower over a long period, the flowers are pink, the glaucous foliage reminding one of miniature Carnation leaves. Two plants which seem never out of flower are *Impatiens Oliveri* and *Lantana salvifolia* (syn. *L. delicatissima*).

The ornamental fruits of three sorts of *Tomatos* hanging from plants grown in pots and trained up the roof are a distinct feature of the house. The variety Red Currant has long racemes of fruits, 18 inches or more in length, often with 50 fruits. The fruits of Sutton's Cascade are slightly larger and the racemes branched; on one raceme there are 70 fruits. The remaining variety is Cherry Yellow. The fruits are rather larger than the two preceding sorts, but not so freely produced.

ROSES.

At the present time (November 19) it is still possible to cut really fine Roses in the open garden. A walk round the Italian Garden at the present time is delightful. Quite a number of the sorts are in flower, several making a brave show. The place of honour as the best, must be given to Frau Karl Druschki, from a bed of which 50 lovely snow-white flowers with long stems could be easily cut. Near at hand is the popular Madame Abel Chatenay, truly one of the best Roses for the garden or as cut flowers. Caroline Testout is well known as a perpetual-flowering Rose; here it is still blooming freely. Mrs. W. J. Grant, Lady Ashtown, one of the newer kinds, together with La France and Auguste Guinoiseau, amongst the Hybrid Tea section, are all deserving of special mention. The best of the varieties are Anna Olivier, G. Nabonnand, and Souvenir de Pierre Notting. The name of Hybrid Perpetual is really a misnomer for most of the varieties included in that section. Exception must be made of the two sorts Dupuy Jamain and Alfred Colomb. At the present time two beds of the former variety and one of the latter have a good number of flowers on them. The China section is best represented by Madame Eugénie Resal.

OUTDOOR CHRYSANTHEMUMS.

The present season has been an exceptionally good one for these plants. During the past three months Chrysanthemums have been a conspicuous feature of the outdoor department at Kew between the Cumberland Gate and the Kew Green entrance to the gardens. The plants were grown in one of the nurseries, and carefully transplanted with good balls of soil at the end of July and beginning of August to beds and borders in which annuals had flowered in early summer. The Duchess border alone contains a thousand plants consisting mainly of the three varieties Flora (yellow), La Luxemburg (bronze-yellow), and Crimson Marie Massie. For fully two months this has been a delightful study in crimson and gold, eminently suitable for this season of the year. Other popular sorts at Kew are Piercy's Seedling (bronze-yellow), White St. Crouts, Pink Marie Massie, Ryecroft Glory (rich yellow), Polly (amber-yellow), Perle Rose (pearl-pink), Rosie (terra-cotta), and Ralph Curtis (creamy-white). *D. D.*

THE COUNTRY GARDEN.

PLANTS POSSESSING PERFUME.

THERE is a certain amount of sentiment, but charming sentiment, in having what for lack of a better name I must call a garden or gardens within the garden. Thus the Rose garden, the rock garden, the garden of sweet scents, perhaps the herb garden, the old-fashioned garden, sometimes even a garden devoted to one family—the garden of Poppies for instance. We do well to emphasise the value of titles such as these which, given to the different portions, make for well-marked characterisation and distinction.

The weak point of many of our English gardens lies in the monotony that runs through the whole space; whereas if the different portions were known by distinct titles there would be a more definite basis to work upon, and greater individuality and character would result. I am going to-day to write down a few thoughts on the seasonable making and stocking of a garden of sweet scents. It may be that the position will allow of a rather definite marking off of its limits; this entirely must depend upon the surroundings. This marking off may be as slight and unostentatious as a hedge of Lavender or Rosemary, or Southern Wood—or, on the contrary, it might be found that high Fir poles grown about with fragrant Honeysuckle and Clematis would not be too important a boundary. Then as to the form this little garden within a garden shall take; this again must be decided by each gardener for himself, according to the plan he has to work on. I can only suggest a very charming little garden of sweet scents consists of four borders surrounding a square plot of grass, with or without a pathway between the grass and the borders. For preference, I should say by all means have the pathways where possible, because they add greatly to the sense of completeness.

The squareness, the neat grass plot, the straight pathways, all accentuate the sense of formality. To many people this will be pleasant, and it will help to produce the sense of neatness and trimness that should rule in these gardens within gardens. The trimness may further be emphasised by having an edging round the four sides; and what can be more suitable, more beautiful even, than a border of the old-fashioned white Pinks? These, by the way, are far to be preferred to the heavier Mrs. Sinkins and others of a similar type, as the old-fashioned smaller flowers do not get dashed down with the rain, and they make a denser mass of colour on their wiry, strong stems. Even when not in blossom the plants make a trim, beautiful edging. Too many people think, however, that a Pink edging once planted is planted for ever. This is a mistake. Taking the Dianthus family as a whole, it is not a long-lived one—at least, I will not exactly say that, but when old they become unsightly and leggy, and the richer and heavier the soil the oftener will the plants have to be renewed. In poor soil I have a border in capital condition that has been established over five years, but I know of another garden containing a heavy clay soil in which a similar edging has worn out in the same period. However, it is no serious matter to reset a Pink edging occasionally; it is not even necessary to have recourse to layering: cuttings put in after flowering make healthy young plants.

We must be careful to introduce as many as possible of the flowers which have, as it were, the sentiment of fragrance about them: those which for their perfume poets have lauded and the whole world has learned to cherish and to regard with particular affection. Thus we must see to it that we plant here the Lily and the Violet, Lavender and Jasmine, the Poet's Narcissus, the Daphne, the Wallflower, the Lilac and Philadelphus (Mock Orange Flower), and the sweet-scented Hyacinths.

It must be full of scent over as long a period as possible, and in summer the perennial plants can be augmented by several annuals—Sweet Peas, which may be sown the first week in November except in very heavy soil, Nicotiana affinis, Sweet Sultan, Stocks, and others.

It is, I find, an excellent plan to make a late spring sowing of Mignonette, as this will go flowering on into autumn in better condition than almost any other summer-flowering plant.

The Lilies, where possible, may be autumn planted; and we must remember that many varieties flower well under partial shade, and these too are invaluable for autumn flowering and perfume.

Half-hardy subjects will help to add to the summer display—Heliotrope, Scented Verbena, Oakleaf Pelargonium, and Brugmansias.

We must bear in mind that a good number of the sweet-scented flowers are of somewhat sombre hue. But we desire brightness, and we can have it if we plant generously of those varieties that are brilliant. Thus, the spring Wallflowers, with the two bulbous plants I have mentioned (Hyacinths and the Poet's Narcissus) should be largely planted for spring display. The biennial Stocks in vivid rose-crimson are grand bits of colour, and should be well used, and in the best condition possible, so that they stand out, a beautiful keynote of colour. The brightest tints of the Sweet Peas should be carefully selected.

In choosing such plants as Heliotrope for this garden of sweet scents, bright tones, such as that found in the variety President Garfield, are strongly recommended. There is not a great choice of fragrant yellow flowers, but yellow Sweet Sultan, Musk, and Melilotus officinalis, and some of the Evening Primroses are delightfully scented; and, as already mentioned, for background there may be great poles of Roses and Honeysuckle, Clematis, and Jasmine. *Practical Gardener.*

FRUIT REGISTER.

A NEW REMEDY FOR PEACH BLISTER.

I HAD an opportunity recently of seeing the effects of a new fungicide name Medela, in Messrs. Geo. Bunyard and Co.'s Allington nursery, near Maidstone. The specific had answered splendidly, as the dressed trees were quite free not only from blister but from leaf curl. Some kinds of fruit trees, notably certain varieties of Peaches, are much addicted to these diseases. They include several of the best varieties for flavour, and as a result they are not planted largely. The Peach grower's trouble in this respect will be largely minimised if Medela be applied twice or thrice during the growing season, giving an interval of a fortnight between the dressings. From the results of trials made in this nursery, notwithstanding the very unfavourable season which has suited fungal diseases, trees that were treated once with Medela showed a great improvement, and others, to which a second and third dressing had been given, were quite free of disease, although trees in the same soil and position upon which the specific was not used suffered badly. The makers advise its application early in the year when the trees are in a dormant state. Rain-water is recommended for its mixing. The trees should be syringed when the buds are dormant, and again when they are bursting, and if this does not effect a cure it may be applied when the foliage is fully developed, but at that period it must be used in a weaker state. Medela is also an excellent remedy for mildew and other pests. In heavy clay soils and gardens badly drained, blister is most troublesome, and I recommend a trial of this preparation. For mildew on the foliage I would advise its use freely, but in a weaker state. Trees grown under glass, if subject to mildew or curl, should be given a winter dressing. *Geo. W. Yates.*

PLANT NOTES.

SELECT SPECIES OF ÆSCHYNANTHUS.

THE flowering of the *Æschynanthus* takes place, with a few exceptions, in the late summer and autumn months, when its bright-coloured blossoms are much appreciated. About a score of species have been at one time or another in cultivation, but now there are few in general cultivation, though, fortunately, these include some of the very best for gardens.

One of the very finest of these is *Æschynanthus speciosus*, which has woody stems, several of which are developed from the base. These shoots attain to a length of 2 feet, and they are furnished with oppositely-arranged, ovate-lanceolate leaves of a dark green tint. The flowers, which are borne in terminal clusters, are individually about 3 inches long, and have a peculiar curved shape—a feature common to all members of the genus. Their petals are coloured scarlet-crimson, and are marked with darker blotches just inside the expanded mouth.

Perhaps the best-known member of the genus is *Æ. Lobbianus*, and it is also one of the most beautiful. The stems of this plant are slender and coloured purple: the ovate leaves are not more than an inch long and of a bright, deep green. The inch long, thimble-shaped calyx is hairy and of a dark purple tint. Protruding from this is the bright scarlet corolla, curved as in the others, and about a couple of inches long. As the calyx is developed some little time before the corolla, the plant presents the appearance of being studded with dull, thimble-shaped blossoms, but as the corollas develop they impart quite a different appearance.

Æ. pulcher (syn. *Æ. Boschianus*) greatly resembles the preceding, but it differs principally in having larger leaves, a shorter greenish calyx, and a longer corolla, that is coloured scarlet and yellow.

Æ. Hildebrandii is a small but pretty species, which was introduced to Kew in 1894, and distributed by Messrs. James Veitch and Sons, of Chelsea, two or three years later. The plant, however, seems to have almost dropped out of cultivation. This is to be regretted, as it is a charming little plant and quite distinct from any of the other species. In the Shan States, Burmah, where it is found wild, it forms dense tufts on the trunks of trees in moist situations. The erect stems reach a height of about 4 inches, and are clothed with small, ovate, fleshy leaves. The inflorescences form a terminal cluster of tubular flowers, each about an inch long and scarlet in colour. Less warmth is required in the cultivation of *Æ. Hildebrandii* than for most of the members of the genus, and I have seen it thriving in a cool Orchid house, associated with *Odontoglossums* and similar subjects.

The habitat of most of the species of *Æschynanthus* is south-eastern Asia, where they are found growing in humid, tropical forests, in company with Orchids and Ferns. Several species were introduced by Thomas Lobb, when travelling in that part of the world on behalf of Messrs. James Veitch and Sons, more than 50 years ago.

Under cultivation, their epiphytic character must be considered, and, for this reason, they are, as a rule, best grown in suspended baskets. The sides of the basket should be lined with thin turves of peat, and a suitable rooting medium consists of fibrous peat, leafmould, sand, and pieces of charcoal. Care must be taken that they are not allowed to become dry at the roots, and frequent syringings are very helpful. With the exception of *Æ. Hildebrandii*, the species of *Æschynanthus* require the temperature of a stove, or the warmest part of an intermediate house. Propagation is readily effected in the spring by cuttings of the growing shoots inserted in pots filled with a mixture of equal parts of peat and sand, and placed in a close propagating case in the stove. *W.*

FOREIGN CORRESPONDENCE.

THE GENUS MAGNOLIA.

IN studying the vegetation of the Acclimation Garden at Nikita, near Walta, on the Crimea, I observed that in *Magnolia grandiflora*, Linn., all the specimens are not of the same habit, and when I began to compare different parts of these trees with each other I discovered that there are diversities in the direction of the branches, the form of the leaves, the petals, and the colour of the leaf-veins.

The leaves of a particular specimen, when compared with those on other plants, were seen to be shorter and broader, and in general smaller; besides which nearly all the leaves are somewhat twisted, and instead of the usual deep green, their colour is inclined to yellow. The petals are smaller and narrower, and destitute of a claw-like narrowing towards the petiole; its veins are yellow, or light yellow, whilst the veins of the common *Magnolia grandiflora*, as is well known, are red.

The branches of this particular specimen ascend, whilst those of normal examples droop, and frequently touch the ground; its fruits are fewer.

Not having found in botanical and horticultural literature (Hooker, Vilmorin, Lauche, K. Koch, Wittmack, &c.) any description of the *Magnolia* in question, I have drawn up this note.

As an illustration I append a table to show the differences between the measurements of the length and breadth of the normal form and what I must consider a new sub-species:—

	<i>M. grandis</i>	n. s. - p.
Length and breadth of leaf	27½ cm.	17½ cm.
Greatest breadth	6½ cm.	10½ cm.
Proportion between length and breadth	4½ cm.	1½ cm.

These two instances are typical for the forms in question. I may here state that in the sub-species the leaves gradually narrow towards each extremity, whilst in the normal species they are nearly oval. The small and oval leaves do not occur on the same tree. The brown hairs on the under surface of the leaf are not constant, and therefore cannot be relied on as characters.

I am greatly indebted to the kindness of my friend Miss Katherine, who permits me to name this new form after her, which I have the greatest pleasure in doing—*Magnolia grandiflora* Kathariniana, Bedelian.

Both the species and sub-species grow close together, so that the various peculiarities are not the result of climatic differences, but may possibly be due to special constituents of the soil in the case of the sub-species.

A long series of experiments on the part of various botanists induces me to believe that the varying size of the leaf depends upon the nature of the soil.

I should be very much obliged if any botanists in warmer situations than the Crimea would ascertain if any similar variation occurs under their observation, and, if so, if they would communicate with me, so that the geographic distribution of this sub-species may be ascertained. Dr. J. Bedelian, Nikita.

TEMPERATE HOUSE, KEW.

WE have published from time to time illustrations of scenes in the Temperate House, Royal Gardens, Kew, which is the most remarkable structure of its kind in these islands. The view reproduced at fig. 161 has for its principal feature a very fine specimen of *Alsophila excelsa*, one of the most ornamental species of greenhouse Ferns. In some of the more favoured localities in Cornwall and Devonshire this species can be safely used for sub-tropical gardening in summer.

TREES AND SHRUBS.

LONICERA HECKROLLI.

This is one of the best of shrubby, flowered *Loniceras*; the rich orange-red blossoms are so freely produced that they are extremely effective, especially when the plant has attained to a good size.

DAPHNE LAUREOLA PURPUREA.

Where low-growing, compact evergreen shrubs are needed for the front of the shrubby borders to afford a variety of colour during the autumn and winter months, this spurge laurel will be very valuable. The richness of the purple hue is very noticeable.

VERONICA COOKII.

Unfortunately, this variety is not sufficiently hardy to admit of its being left in the open during the winter, but it is worthy of protection under glass during the winter, or protection in some other manner from frost. The drooping, pure white blossoms are produced freely, and the racemes are fully 6 inches long.

BERBERIDOPSIS CORALLINA.

We seldom see this evergreen climber in a satisfactory condition. It flowers nicely at Aldenham House, Elstree, on a wall facing to the south-east. The plant requires a peaty soil, and when growing freely in spring, an abundance of water.

JASMINUM OFFICINALE FOLIIS AUREIS.

Although I am not generally an admirer of golden-leaved hardy plants, this *Jasminum*, with its rich, golden blotches, appears to me a very pretty plant. If trained to a pole amongst green subjects, it is effective, and deserves to be more widely known.

ROMNEYA COULTERI.

One more season has proved the value of this Californian Poppy in localities where it will succeed. Introduced in 1875, it has hardly become as common as its merits deserve, owing, possibly, to a want of knowledge as to its cultural requirements. With me this year it has flowered continuously from the middle of July. On October 10 there were still



[Photograph by C. P. Raffill.]

FIG. 161.—VIEW IN THE TEMPERATE HOUSE, ROYAL GARDENS, KEW.

THE EVERGREEN OAK AS A HEDGE-PLANT.

This evergreen is seldom employed as a hedge-plant, but it is probably due to the fact that the price is somewhat dear. There is no mistaking its suitability for the purpose, for the growth is close yet vigorous, and it is easily kept in order, for it will stand much cutting. On the roadside from Margate to Ramsgate I recently saw a capital hedge extending for fully a quarter of a mile. As growth is free and the branches are freely increased by pruning, it is not necessary to plant very thickly.

BERBERIS FREMONTII.

Those who appreciate plants with glaucous leaves would do well to grow this *Berberis*. Apart from its colour, it resembles a small form of *B. Bealii*—an interesting plant. The yellow flowers of *B. Fremontii* are sweetly scented, and are followed by scarlet berries.

several fully-expanded blossoms. Many of them this year have measured as much as 8 inches in diameter; they are pure white, except for the yellow stamens. The species is not at all particular as to soil. A southern aspect at the foot of a wall affords an ideal site, but an abundance of water must be applied to the roots when the plant is in full growth, and an occasional application of liquid manure will do much good in inducing vigorous growths to push from the base of the plant: such shoots as these produce the finest flowers. This plant is generally regarded as an herbaceous subject, but it hardly comes within the definition of such, as it scarcely ever dies down to the ground. Certainly not in my case, as it retains its deciduous shrubby character. That it is sometimes shown as an herbaceous subject illustrates how difficult it is to define strictly what is an herbaceous plant. *T. Molyneux.*

NURSERY NOTES.

LAXTON BROS., BEDFORD.

THE speciality of this firm is the Strawberry, of which fruit Messrs. Laxton Bros. have raised or introduced to commerce most of the newer varieties in recent years. Messrs. Laxton Bros. however have devoted much attention to the raising of other fruits, and their nursery contains many thousands of hardy fruit trees, flowering plants in abundance, and many well-stocked plant-houses. The nursery is approached by a roadway on either side of which are spacious borders filled with herbaceous plants and ornamental shrubs and trees, including many of the choicer species of Conifers. Not far from the entrance is a range of plant-houses, several of which at the time of our visit were filled with varieties of winter-flowering Carnations. The plants were just about to expand their flower-buds, and exhibited strong, sturdy growths. The varieties included Victory, Robert Craig, Dornier's White, Perfection, Enchantress, Mrs. Burnett, Britannia, Christmas Eve, J. E. Haines, and many others. Other houses were filled with Ferns, many of which were species of *Pteris* suitable for florists' purposes. We also noticed the newer varieties of *Nephrolepis*, including the beautiful Whitmanii variety of *N. exaltata*. Amongst the miscellaneous plants in the other glasshouses were subjects—either in flower or fruit—that had been cross-pollinated with a view to the raising of novelties. A plant of *Clematis* raised from *C. Jackmanii* × *C. flammula* was interesting. This was in flower, and the inflorescence resembled neither of the parents, but that of *C. coccinea*. There were large batches of seedlings of Apple, Pear, Plum, and other fruiting trees. The late Mr. J. Laxton began experimenting in cross-breeding plants about the year 1865, his first work being amongst culinary Peas and Zonal Pelargoniums. The first certificate he obtained was for Pea Supreme in 1868, and in the following year his variety Alpha was similarly honoured. Pelargonium Jewel followed in 1871, and then Emily Laxton, one of the first of the semi-double scarlet varieties. Mr. Laxton next produced Peas William I., Dr. Hogg, Marvel, Omega, Fillbasket, and G. F. Wilson, all standard varieties. He also raised Roses, including the varieties Chas. Darwin, Dr. Hogg, Mrs. Laxton, Princess Louise, Duchess of Bedford, and Mrs. Harry Turner.

The two sons of the late Mr. Laxton have carried on the work of hybridising, and have devoted much attention to the raising of Strawberries; it will be remembered that they have raised such excellent varieties as King of the Earlies, Royal Sovereign (one of the best all-round Strawberries ever raised), Noble, the Laxton, and others, their latest novelty being Bedford Champion. The firm has also continued to raise culinary Peas, and have distributed such valuable varieties as William Hurst, Gradus, Alderman, Thomas Laxton, and Laxtonian, sorts that would rank high in any census of the best varieties of Peas. In a large orchard-house trees in pots were fruiting, the majority of which had been specially cross-fertilised and the numerous labels attached to the fruits, each bearing record of the cross, showed clearly the object of the individual crossing. Messrs. Laxton have crossed the Apricot with the Japanese Plum, and the Peach with the common Plum; but although some of the trees have flowered, none has yet borne fruit—a result which is being eagerly awaited. A desirable Plum has been raised from Grand Duke × Monarch, and this was seen in fruit. It is a week later in season than President, a variety which it greatly resembles in appearance. Another interesting seedling Plum was raised from Sultan × Early Orleans. Cochet Père is a new variety, of French origin: when ripe it has a pleasing yellowish-orange exterior. In this house were also several new French varieties of Pears, of which we noticed Belle de Portevine, a long pyriform

fruit, De Cure, a big, finely-shaped Pear, and Belle de Premesque, an early variety with a clear yellow skin. Then of seedling Apples we were shown one with a beautiful form and pleasing eye, raised from Schoolmaster × Wild Crab, and another, the result of crossing Lane's Prince Albert and Schoolmaster. Although a quite young tree, it was fruiting freely. There are altogether in this nursery more than 500 seedling Apple trees none of which, up to the present time, has fruited, and as there are also as many seedling Peaches and Plums, it is reasonable to expect that varieties of merit will be forthcoming, especially as all have been hybridised with some definite purpose in view. Experiments have also been made in the raising of ornamental-flowering Tobaccos from *Nicotiana affinis* × *N. Sanderæ*, the resultant hybrids having flowers larger in size than the hybrids of *N. Sanderæ*.



FIG. 162. TREE OF SYKEHOUSE RUSSET APPLE TRAINED AS A STANDARD CORDON, OR "AMATEUR STANDARD."

In the open nursery we were impressed by the very large number of tiny pots piled in many heaps. These are required for the layering of Strawberries, of which plants the firm dispatches an enormous quantity to all parts of the world during the season. Every year 100,000 new pots are required to replenish the stock.

A tour of the nursery grounds reveals the very extensive area devoted to hardy fruits of all kinds. There are Apples, Pears, Plums, Peaches, Apricots, Gooseberries, Currants, and other fruit trees in great variety and in large breadths; indeed, half the nursery is planted with fruit trees. The stock of Apples is very large, and it includes a number of standard cordons, which many amateurs and cultivators for market supply appreciate for the reason that the stems of standards or half-standard trees are thus made valuable for producing fruit before the

heads of the trees have become very large. The variety illustrated as an "Amateur's Standard" at fig. 162 is Sykehouse Russet.

Raspberries, Blackberries, the Loganberry, and kindred fruit trees are made a speciality at Bedford. We were shown a large stock of Raspberry Abundance, a variety of stronger growth than Superlative, and superior in flavour to this older kind. The useful Loganberry has been crossed with Raspberry Superlative; the hybrid bears the name of Laxtonberry, and it is said to possess the flavour of the Raspberry, with the habit and general appearance of the Loganberry. In passing, we may record the exceptional growths made by the young Peach trees—many of the current season's shoots were 5 feet or more in length. The staff was busily engaged in training suitable specimens as espalier and other wall trees, all this being performed in the open ground, bamboo canes being utilised for training the shoots in position. There are large breadths planted with Roses, and the nursery contains a good stock of herbaceous plants, ornamental-leaved trees and shrubs, Conifers, and other subjects.

THE ROSARY.

CULTURAL NOTES FOR DECEMBER.

OF late years the most severe frosts have occurred after Christmas, but precautions should be taken early to protect, by earthing-up, the dwarf, tender varieties. Owing to the fine, warm weather of September, the plants generally have well-ripened wood which is robust enough to resist damage from frosts that are not too continued or severe. The most harmful weather for Roses in the open is an alternation of frost, thaw, and rain, for these conditions are worse than a continued dry frost. The recent rains have provided an abundance of moisture in the soil, and any planting should be finished during dry mild weather. Any Standard Briars that are temporarily "heeled in" should have the first attention and be planted at once. If ground that was trenched has been beaten down by the recent heavy rains, or if the soil is of a heavy texture, apply a light dressing of wood ashes, burnt earth, or leaf mould, and lightly fork the surface. This will make the ground more friable and easy to work. Cuttings of Dwarf Briar, Manettii, and De la Grifferie Stocks should be got in without delay, according to the instructions given in my last note.

Although the third week in October is undoubtedly the best time to plant Roses (except Teas and other tender varieties), the soil and weather at the time of writing are exceptionally favourable for planting. In suburban and town districts, where fogs and smoke are prevalent, planting is best deferred until the spring.

Single varieties of Roses are very popular just now; they are especially valuable for massing in large groups. The following are among the best varieties:—Dawn, Irish Beauty, Andersonii, Gustave Regis, and Pyracantha; the best for planting on sloping banks are Dawson's Rose, Anna Marie Montravel, Jersey Beauty, and Edmond Proust; while for covering tall arches, Paul's Carmine Pillar and Aimée Vibert are to be recommended, the pure white of the latter blending well with the vivid carmine of the former. Arches clothed with the Hybrid Sweet Briars raised by Lord Penzance are also an acquisition if space will permit of their inclusion. Of this type Anne of Geierstein, Amy Robsart, and Lady Penzance are some of the best sorts.

The earliest batch of Roses in pots that were started into growth during November will now be actively growing. As the dull season is now approaching, the temperature of the house should not exceed 55° during the day: provide

little top ventilation for a few hours daily in favourable weather, but close the house entirely at about 3 p.m. To prevent the plants from becoming drawn, place them well up to the light and as near to the glass as is possible. The Tea-scented varieties can be kept at the warmer end of the house. On bright days a light syringing may be given overhead in the morning in time to allow the foliage to become dry again before nightfall. If the weather is dull, an occasional damping down of the floors and stages will suffice to counteract the dry, hot air and to keep down insect pests. If these latter become troublesome, the vaporiser must be used, and if mildew appears, the hot-water pipes, made notter, should be smeared with a solution of sulphur vivum (not flowers of sulphur) and soft soap. A second application of this specific will usually suffice to remove all traces of the fungus.

Tea, and other Roses in pots, that have been plunged outside and given temporary protection to enable them to perfect their late autumn flowers, should now be brought into a cool dry house, and if blooming is over, be kept quite dry at the roots. This drying process, if done gradually, will assist the plants to ripen the wood. The grafting of Roses under glass will now be in full operation, and as the first batch of grafted plants are taken from the frames and placed in the house, others newly grafted can take their place. If green fly is present, fumigate at once, for if this pest is allowed to increase, the grafted plants will be ruined. The grafting of freshly-potted seedling Briars should not be attempted with dormant wood. It is usual to select stock with stems of about the thickness of a quill, and when the shoots are trimmed, whip or splice grafting can be practised, as in the case of the Clematis. When the grafting is completed the plants should be plunged in fibre or ashes under frames, and as the union of stock and scion will take a long time they should be allowed to remain in the frames for this period. When root and top growth has become active, the plants can be gradually brought into the house and treated in all respects like the other grafted Roses. J. D. G.

The Week's Work.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq., Norwood, Alloa, Clackmannanshire.

Pot Vines.—The pot vines that are starting into growth will now require very careful attention, and must not be subjected to extremes of any kind. Maintain a steady bottom-heat of 60°, and an atmospheric temperature at night of 55° to 60°, allowing a rise of a few degrees by day according to the weather. The vines must not in any case be hurried into growth, as root-action is still very slow. Disbud the canes, rubbing off all weak buds. Those remaining should be 18 inches apart alternately on each side of the cane. If they have not broken away freely, a slight syringing of the canes morning and evening will help them. Never syringe them after this stage is past, except in cases of attacks of red spider. The damping of floors and borders each morning and evening will be sufficient to maintain a humid atmosphere. Prevent steam arising in the pit. A little air may be admitted on fine days, but draughts must be prevented. Use only the ventilators at the top, and close these early in the afternoon whilst the sun's rays are still upon the glass. Apply water to the roots very carefully, for little is needed at the present. The heat already mentioned will be sufficient until the vines show signs of flowering.

Early Vinery.—If the house was closed last month according to the directions then given, the buds will now be swelling. Disbudding should be done without delay. Leave two of the strongest on each spur at present, but afterwards the weaker one will also be rubbed off. If any vines break more strongly on the upper than on the lower part of the cane, it is sometimes necessary to lower the canes to a horizontal position. It is only in extreme instances that the syringe has to be used. As soon as the vines are in leaf, raise the atmospheric temperature to 55° at night, and 65° by day, exclusive of sun-heat; these temperatures will suffice until the flowering period. Continue to damp the borders morning and

evening, but only put a very small quantity on the borders. Test the soil, and if it is found to be dry apply a watering, which will be sufficient for the vines until the flowering stage has been passed; during the flowering stage the borders cannot conveniently be watered. Ventilate the house very cautiously by means of the top ventilator and close the house early in the afternoon, sun-heat being preferable to that obtained by artificial means.

Outside borders.—The outside borders of mid-season vines should be mulched now and thatched, so that the surface will throw off heavy rains, and, indeed, all the outside vinery borders should be given a mulch of rough, stable manure 4 to 6 inches thick. This will protect the roots from severe frost, and where vines have been showing a tendency towards weakness of growth, a rich mulch should be applied which will benefit the vines by enriching the border through the carrying down of the ammonia and nitrogenous food materials by the rains.

Fruit trees in pots.—See that all fruit trees in pots plunged out-of-doors are supplied with a mulch of fresh litter from the manure, putting this 8 inches deep all around the pots to protect the pots and roots from frost. If birds are troublesome by picking out the fruit buds, cover the trees with nets.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Cleaning of plants and plant-houses.—At this season of the year when there is less pressure of work in the potting-shed, the opportunity should be taken to overhaul the interior of the plant-houses. In the first place, let all the woodwork, glass, &c., be thoroughly washed down, and the walls may then be limewashed. When this has been done it will be necessary to give attention to the plants. Climbers under the roof and pillar-plants may require to be thinned, and some may need sponging and spraying to cleanse them from dirt or insect pests. After all this work has been done, let the plants be carefully re-arranged, making the house appear as attractive as possible. In sponging tender foliage plants, such as Codæums (Crotons), Cordylines (Dracænas), Pandanus, &c., every care should be taken to avoid splitting or cracking the leaves, as the results of carelessness in this respect, if not noticeable at the moment, after a few days would be only too plain, rendering the plants almost useless for any prominent position, such as the dinner-table, &c. Allow each specimen plenty of room, and afford the smaller plants a position on a shelf where they will be the better exposed to full sunlight.

Richardia africana (athiopica).—Where this species is required to bloom in mid-winter, a batch of the strongest plants should now be selected and placed together in a house where a minimum atmospheric temperature of 60° will be maintained at night, rising 10° in the daytime by sun-heat. Afford the plants a top-dressing containing some manurial stimulant, and apply frequent and copious waterings to the roots. On the first appearance of green fly, fumigate the house at once, or this pest will render the blooms useless. A variety called "The Godfrey" is considered to be an improvement on the type, having purer blooms, and it is now cultivated in great quantities by market-growers.

Retarded plants.—Where Lilacs, Rhododendron (Azalea) molle, and Spiræas are required to bloom early in the winter, it should be remembered that retarded plants are vastly superior to those which have made growth during the present year. Before such retarded plants were available it was a matter of more or less difficulty to get Lilacs, Spiræas, &c., ripened sufficiently early to place in heat in order to have them flower before the New Year; but now the cultivator can be practically certain of success at any given date, and this with very little forcing. At the time of writing we have Lilacs, Rhododendron molle, Spiræas, Liliums, and Lily of the Valley in full bloom, and they have caused very little trouble. After receiving such plants from the nursery, pot them in a light, porous soil, and stand them in a moderately cool house until the buds show signs of bursting. After this stage more heat may be applied, and they will rapidly

open into bloom. When the blooms have partially expanded, reduce the amount of heat somewhat, in order to harden them sufficiently for use in the conservatory or dwelling-house.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

Animals in parks.—The interest which living moving creatures excite in most people is so great that their presence, under certain restrictions, is desirable in public parks where the necessary facilities exist for keeping them. Waterfowl, whether of the commoner or rarer kinds, always attract so much attention that every park which possesses a sheet of water, no matter how small, has its collection. Even pigeons and doves, when housed in a park, become a decided source of amusement and delight, especially to the younger visitors.

Aquarium.—A small aquarium furnished with a number of suitable glass tanks, in which the coarser native fish or hardy reptiles may be exhibited, or an aviary containing a collection of British birds, is a very cheap and effective method of interesting the public. In localities where no zoological garden exists, the provision of animal life can be considerably extended beyond this modest display without interfering with the legitimate objects of a park or adding greatly to the cost of its maintenance.

Exotic animals.—In the majority of seaport towns it is generally a very easy matter to get together a thoroughly interesting and varied collection of animals at a very small cost. Sailors leaving their ships are only too glad to dispose of pets (which on dry land often become a nuisance to their owners) to anyone willing to take care of them, while many ship's captains bring from abroad all kinds of animals with the intention of presenting them to parks. In one of our parks in this city we possess a very valuable collection of exotic animals, all of which have been presented by sailors, captains, or shipowners. At one time so many of these creatures were offered to this department that, with a view to restricting the cost of their upkeep, it was decided that only graminivorous animals could be accepted. As this decision led to the refusal of many very interesting species, it was found advisable to accept whatever could be provided for, irrespective of its being carnivorous or otherwise.

Accommodation necessary.—The most important factor bearing upon the general welfare of such animals and their successful maintenance is the provision of proper living and housing accommodation for them. This is the only matter which calls for any considerable initial expenditure in making a small zoological collection. Many things, such as deer, gazelles, goats, emus, and the American ostrich can easily be accommodated, provided there is enough room, as they merely require a shelter to retreat into during cold and inclement weather. All quadrupeds that are addicted to climbing and birds which fly, need to be confined within covered-in areas from which they cannot escape. Squirrels, monkeys, coatis—the two last are also the better for having shelters which can be slightly heated during winter—pheasants, storks, and peacocks are some of the kinds which can only be kept under covered areas. A more rational method of dealing with the various inmates of zoological gardens has, within recent years, been adopted which may well be followed in a modified form in parks where animals are kept. Instead of confining the more harmless species in cages, as was at one time usual, they are now put out in small colonies on open ground securely fenced in. Here they have plenty of space allotted to them, so that they are able to move about freely and live under more natural conditions. Hares, foxes, beaver-rats, &c., lend themselves very well to this treatment.

Educational value.—Whether the creatures exhibited in a park are fish, reptiles, birds, or quadrupeds, their educational value should never be overlooked, and every care should be taken to furnish the common and scientific names in such a manner that visitors may readily decipher them and easily identify the animals thus indicated.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to LORD CLINTON, Bicton, East Devon.

Injurious insects.—Fruit trees and bushes are subject to the attack of many pests during the spring and summer months, and most of these pests can be most effectually dealt with while the trees are leafless and in a dormant state. Scale insects are often found on Peach, Apple, and Pear trees; the ordinary brown scale attacking the Peach trees can be easily dislodged with a small label, but the mussel scale that clings so tenaciously to the Apple and Pear trees require the more drastic treatment. Trees growing against walls appear to be most affected, especially Pear trees. In very bad cases the bark should be scraped with a flat piece of wood or a piece of hoop iron, and afterwards brushed with a hard scrubbing-brush, eventually spraying with the caustic soda wash, which may be applied this month to Apple, Pear, and Plum trees, and a second application may be desirable at about the middle of February. The Pear midge is becoming a very serious pest, and as yet neither a preventive nor cure has been found, but since the pupæ is said to harbour in the soil, it would be well to remove 6 inches deep or so of the surface soil for a radius of 5 feet, and replace with fresh soil from the vegetable quarters. Kainit is also recommended for application at the rate of 4 ozs. to a square yard; this should be done in autumn, and again in March, but in our case it has not proved successful. Gooseberry plots that are annually affected with the caterpillar should have the top soil removed and a top-dressing substituted, which, if not quite a cure, lessens to a great extent the attack in spring. Apply fresh grease bands to the stems of orchard trees to catch the winter moth. Cankered branches on the Apple should have the affected parts cut away, and be well scrubbed with the Gishurst compound.

Manuring of fruit trees. No definite instructions can be laid down regarding this matter, and it must rest entirely with the cultivator to decide what are the immediate requirements of each tree under his charge. This much may be said, that trees in the habit of carrying average crops annually usually need some manurial assistance, especially those occupying wall space and having a limited root run. Fresh manure from the farmyard or stable is usually too rich for garden trees of the Apple, Pear, Plum, &c.; this is best used as a mulch in early summer, and its nutriment will get washed down to the roots by the rains. As a stimulant for wall trees, we find a thin layer of soot and fresh lime applied in alternate years keeps the trees in a healthy and fruitful condition; this is lightly pointed in with the garden fork after the work of pruning and training has been completed and the prunings cleared away. Guano and some chemical manures may also be used with good results. Grass orchards should be manured annually. Manure from the farmyard, if mixed with double its quantity of wayside or old potting soil, forms a good top-dressing. Gooseberry and Currant bushes require the best of manure, and this should be forked in after the prunings have been collected.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Surrey.

Cleansing of plants and houses.—As soon as the leaves have fallen from the tall, deciduous trees with which at this place we are almost surrounded, we make it a practice to thoroughly overhaul the Orchids, and wash the glasshouses both inside and out, taking every care to see that in doing such work the laps of the glass are properly cleansed from all accumulations of dirt and slimy matter. If this work is done properly, any atmospheric moisture that condenses will be able easily to pass between the panes of glass, and in a great measure drips will be thus prevented from falling on to the plants. The brick walls under the stages, &c., should be cleaned occasionally; lime-washing them will produce a clean white surface, which will add to the light appearance of the houses, and at the same time the wash will destroy many insect pests. Previous to re-arranging the plants, each one should be thoroughly cleaned, sponging the leaves, stems, and pseudo-bulbs with some safe insecticide. There are many insecticides now on the market, and extreme

care is needed in selecting one that will not injure the plants. Very few Orchids now require to be potted, but the cleansing and re-arranging of the collection will afford the grower an opportunity to thoroughly examine the plants, and to ascertain exactly what condition they are in, for, as a grower once remarked, "If you wish to know how many leading growths, flower-spikes, or pseudo-bulbs, &c., a plant may have, ask those who cleaned it last."

Slugs and Cockroaches.—In going through the cool houses slugs must be hunted for, as these pests are most troublesome during the winter months, having been introduced with the sphagnum-moss used in potting. By day they conceal themselves low down in the moss or in the axils of the leaves, but at night come out, and bite through the young, succulent flower-spikes of *Odontoglossums*, *Oncidiums*, *Masdevallias*, &c. Should any valuable plants be infested by these creatures, isolate them by placing them on inverted flower pots stood in pans of water, and if the slugs cannot be caught, then carefully pick out the surface of the compost to the depth of an inch, afterwards re-surfacing with fresh material, and as these slugs rarely bury themselves or their eggs below this depth, this operation is generally effective in clearing them out. Numbers of slugs may be caught by looking over the plants with the aid of a good lantern at night and early in the morning, also by placing small shallow pans filled with bran about in the stages. Baits of young Lettuce, Cabbage leaves, &c., are always useful for entrapping them. Many of the *Odontoglossums* are now developing their flower-spikes, and particularly the rare and special varieties should be protected by wrapping a piece of rough wadding round the base of each spike. In consequence of the need for extra fire-heat in the warmer houses, cockroaches generally become troublesome at this season, but they must be kept in check, or much irreparable damage will be done. Every evening they should be sought after, in order to destroy every one that it is possible to get at. Also bait them with beetle poison, such as phosphorus paste, *Vallis*, *Beetlecut*, and several other excellent kinds. It is not advisable to lay the one kind of poison down in the same house every night, as the pests soon get used to seeing it about, and afterwards will not touch it. Therefore, it is better to occasionally substitute one kind of poison for another, as the change of food is enticing to them.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencaer, Cornwall.

Coniferous trees.—Any specimens which show signs of deterioration may usually be brought into a healthier condition if they are given ample top-dressings of some suitable soil. Except in small quantities, manure, either animal or artificial, is not to be recommended for Conifers. Where road-scrappings can be obtained they form the best material for top-dressing these trees. The road surveyors' men are usually busy from now onwards "clearing the water-tables," and the material thus obtained, together with the road-cleanings, form goodly heaps. Frequently this can be obtained in country districts for the mere carting away. The general rule seems to be that the owner of the land which adjoins the highway has the first claim to it. Decayed vegetable refuse and old potting soil also make useful top-dressings. It is better to thoroughly dress a few trees every year than to distribute the available material in small quantities over the roots of many trees. As these trees are chiefly surface-rooters they need this assistance earlier than the broad-leaved trees do. It is generally wise to apply a top-dressing to any valued specimen when it has become 25 to 30 years old. If a liberal dressing is applied, it should suffice for five or six years. Results from this treatment must not be expected to become obvious until at least 12 months have elapsed.

Impatiens Holstii.—Even in such an unfavourable summer as we have experienced this year a trial planting of this novelty has produced good results. Plants bedded out early in June continued to flower freely, and have only recently been cut down by frosts. Seeds were sown in moderate heat early in March, and the seedlings grew so freely that by the bedding-out time they were nearly 2 feet in height.

Shelter from rough winds is most essential, and it appeared that although abundant moisture was necessary during the warm weather, the plants suffered more from wet than from light frosts. Notwithstanding that the colour of the flowers is described as a brilliant vermilion-red, there was a great variation of tint; most shades were very pleasing, whilst others were disappointing. *Impatiens Sultani* seems to require greater solar heat than we get in this part of Cornwall.

Pieris floribunda.—The value of this hardy winter-flowering shrub does not appear to be generally appreciated. Perhaps its only fault is the slowness of its growth. Here several large bushes have just expanded their first flowers, and it will be the end of March or even April before the last have faded. Cut sprays open freely in water, and keep fresh for several weeks. Like many other American shrubs, it often requires peat for its well-doing, but will thrive in any soil which suits *Rhododendrons*. When planting, the soil around its roots should be made as firm as possible. Many nurserymen catalogue this shrub under its old generic name of *Andromeda*.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq., Cobham Park, Surrey.

Parsley.—In many districts it is necessary to transplant Parsley into unheated frames, or to sow seed in the open in such a position that the plants can be afforded the protection of some old lights during severe weather, and in the event of heavy falls of snow. Although the necessity for protection arises, the crop must on no account be coddled, but light and air should be afforded, whenever the conditions of the weather will permit. There is often a considerable demand for Parsley in winter, and it is needed to take the place of some varieties of salads, which during more favourable seasons are used for garnishing.

Lettuce.—The supply obtainable out-of-doors is now practically exhausted, but if some plants were set out in sheltered positions during September, and have since received the protection of some lights, satisfactory little "hearts" will now be available for cutting. I am writing particularly of that variety "All the Year Round" Cabbage Lettuce. Plants in cold frames will require abundance of air whenever the weather is favourable; the surface soil between the plants should be frequently stirred, and all decaying leaves removed. These latter remarks apply to all young vegetable plants that are being wintered in cold frames, for they explain very necessary means to successful culture.

Chervil.—The first batch of these that have been started in a moderate degree of heat will now be starting into growth, and another batch should be brought forward, to come in as soon as these are consumed.

Chervil, Mint, and Tarragon.—Chervil will still be quite green and fit for use, and some should be placed in a cold house, the remainder being cut hard back to induce it to start into growth early in the New Year. Mint and Tarragon, if cut back as advised in a previous Calendar, will now be ready for placing in a moderate heat to start them into fresh growth. The application of heat to herbs should always be carried out with a certain amount of caution, for if excessively forced the young leaves will be found to be void of all flavour.

General work.—Up to the present time the work of preparing the ground for next year's crops has not made as satisfactory progress as could be wished owing to the continuance of wet weather which has rendered wheeling and carting a matter almost of impossibility. Full advantage must be taken of frosty mornings to get as much of this work done as is possible by using all the labour available; by this means sufficient can sometimes be done to last for several days' digging or trenching as the case may be, and the walks will not be nearly so much cut up as if the wheeling were done in wet weather. Where a fire is generally kept going to burn all garden refuse that can be burned, an accumulation of ashes will now be available for putting on the ground. Most vegetables will derive great benefit from liberal applications of good ashes, and similar ashes will be very useful later on for sprinkling in the seed drills at the time of sowing.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, DECEMBER 7—

Soc. Franc. d'Hort. de Londres meet. German Gard. Soc. meet.

MONDAY, DECEMBER 9—

Nat. Potato Soc. Annual meet. United Ben. & Prov. Soc. Coms. meet.

TUESDAY, DECEMBER 10—Roy. Hort. Soc. coms. meet.

WEDNESDAY, DECEMBER 11—

Winter Flowering Carnation Soc. Exhib. in Regent's Park, London.

THURSDAY, DECEMBER 12—

National Rose Society's Annual meet. and Dinner at Hotel Windsor.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—39.3°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, December 4 (6 P.M.): Max. 52°; Min. 39°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, December 5 (10 A.M.): Bar. 29.1; Temp. 45°; Weather—Bright.

PROVINCES.—Wednesday, December 4 (6 P.M.): Max. 51°; Colchester; Min. 42°; Scotland and N. Ireland.

SALES FOR THE ENSUING WEEK.

MONDAY—

Freehold Nursery, Wolverhampton Road, Stafford, at Swan Hotel, Stafford, at 4.

MONDAY AND WEDNESDAY—

Sale of Dutch Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY, WEDNESDAY, AND FRIDAY—

Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

MONDAY AND FRIDAY—

Roses and Herbaceous Plants, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

TUESDAY—

1,286 cases of Japanese Lilies, Gladioli, Lily of the Valley crowns, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

WEDNESDAY—

Palms, Azaleas, Roses, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

THURSDAY—

Nursery Stock at the Bellingham Nurseries, Catford, by order of Messrs. J. Laing & Son, by Protheroe & Morris, at 12.30.

FRIDAY—

Imported and Established Orchids, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

The subject of plant disease is one that must always be fraught with interest—often a melancholy one—for those whose business or pleasure lies in the direction of agriculture and horticulture. Especially is this the case when a malady assumes an infectious character, and thus more seriously affects the existence of the attacked species over a considerable area. The history of our cultivated crops teems, unfortunately, with failures due to epidemics, and yet we too often persist in hesitating to ensure the proverbial stitch in time, and thus the enemy gets a foothold.

Perhaps this hesitation is not unnatural. The causes of epidemics are often insidious, and may not be obvious to those unaccustomed to enquire minutely into the details of plant structure. Thus they are apt to be put down to natural and inevitable "conditions," whereas they are generally, as a matter of

fact, due to natural and preventable causes. Preventable that is, if they are taken in time.

Nothing is more common, for example, than to hear the remark that such and such a tree is being killed by a fungus which is obviously bursting through the bark, and is forming its bulky fructifications. But the real damage has already been mainly done. The fructification is only the outward and visible sign of the completion of the mischief that has been going on inside the tree. The fructification is allowed to grow, and thereby to scatter abroad its myriads of spores to infect other trees in the vicinity. But, it is often objected, the adjacent trees do not necessarily take the disease. This may be quite true, for in many cases it is not possible for a spore to successfully infect a tree unless there happens to be a wound through which it can burrow its way inside. But trees are seldom quite free from wounds, and given the suitable conditions infection may easily follow, especially when the conditions of growth happen not to be favourable to that particular species.

Instructive examples of infection of this sort can be seen in most districts by those who know how to look for them. But the fungus pest may have methods of its own of gaining entrance to the plant, quite apart from previously injured surfaces. Thus the so-called "blights," of which the Potato disease is a familiar example, do not wait for any extraneous assistance, but readily invade the plant through the leaves.

A very common, but, fortunately, not particularly dangerous, disease which affects Sycamores is the black leaf-spot. We recollect observing an instructive instance of the appearance and spread of this disease in a fine avenue of Sycamores in the Midlands. In the first year only two or three trees which grew near one end of the avenue were affected. By the second year about half the trees had taken the disease, and in four years every one showed the disfigurement caused by the blotching of the leaves. But it was, and apparently still is, too much trouble to stamp out the evil by destroying the dead leaves in autumn.

When, however, a malady seriously affects a staple article of economic importance it becomes the urgent duty of all concerned to spare no efforts in repressing it at its first onset. Most of these diseases, as their causes become known, prove to be vulnerable at one or another stage; but others, on the contrary, when they have once become established, are very difficult to deal with effectively in any way short of extermination of the infected crops. The Potato scab appears to belong to this more refractory class, and the difficulty in fighting it lies in the abundant formation of resting spores, and in their power of remaining alive in the soil through several years. They lie there, waiting their chance of springing into new activity whenever they get the opportunity of again infecting a similar crop. In dangerous parasites of this nature the only economic method to pursue, so long as it continues to be possible, is to stamp it out at its first appearance. The earlier this is done the greater the economy in the long run, but if the days of grace are allowed to expire and the pest succeeds in establishing a firm hold on the land, the difficulties which might have been easily

surmounted at first tend to increase indefinitely, and the disease gets out of hand in the same proportion.

Of course, scientific advice is necessary to enable the practical man to decide as to how he can best deal with the problems of disease as they arrive. Unfortunately, it happens—and in such complex matters this ought not to cause undue surprise—that the experts do not always agree. No one is infallible, and the truth of the matter is only reached when the causes of the differences of opinion have been explained. The grower, however, is perhaps not unnaturally impatient when he sees the damage, which he cannot really explain, continue to ravage his crops. He is apt to undervalue the help that science can give because the first opinions of his scientific adviser may turn out to have been incomplete or inexact. And yet it is clear enough that it is only by a scientific, that is to say by a complete and exact, explanation of the causes and conditions of the epidemic that we can hope to substitute intelligent preventive measures for the more or less imperfect remedies with which we too often endeavour to check the progress of disease.

OUR SUPPLEMENTARY ILLUSTRATION to the present issue represents a scene in the interior of the fernery at Wergs Hall, near Wolverhampton. The building was erected by Messrs. W. RICHARDSON & SON, of Darlington, entirely from designs prepared by the gardener, Mr. G. BRADLEY. It is situated on the north-west side of Wergs Hall, one of the most beautiful and picturesque residences in the Midland counties. The building is about 50 feet long and 12 feet wide at either end, the centre being about 21 feet square. It is built, writes Mr. BRADLEY, of brick, and is covered with cement. The inside walls are formed on the rough-cast principle, with stone of a warm brown colour from a local quarry (Codsall) about one mile distant; the stone is broken to a fairly small cubicle, and attached by cement. It is very well adapted for the purpose, as it is of a soft texture, and therefore capable of retaining a certain amount of moisture. The floor is formed of gravel and cement roughed over with sand. There are two Roman archways, one at each end of the fernery, the pillars of which are formed with iron rods embedded in cement and random stone. These act as a screen, and are very picturesque. The whole of the roof is covered with glass. In the centre of the fernery is an arched dome, which projects beyond the height of the roof. An old-fashioned bay window is fixed on one side of the building, which was taken out of an old cottage on the estate. In the recess aquatic plants are grown, a seat also being provided, covered with Virginian cork. Apertures are let into the wall to resemble troughs, in which Ferns thrive remarkably well. Under the dome there is a spray fountain and miniature waterfall; the water is supplied by hydraulic pressure from a large pool in the grounds, and can be turned on and off at pleasure. There are two doors, one communicating with the conservatory, and the other leading to the drive. All apertures, nooks, and crevices are planted with choice Ferns, and they can all be seen to advantage.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will take place on Tuesday, December 10, in the Society's Hall, Vincent Square, Westminster. At the afternoon meeting of Fellows a lecture on "Fungous Diseases of Plants" will be delivered by Mr. E. S. SALMON.



VIEW IN THE FERNERY AT WERGS HALL, NEAR WOLVERHAMPTON.

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Photograph by Bennett Clark

Gardelton

HORTICULTURAL CLUB.—The next house dinner of the club will take place on Tuesday, December 10, 1907, at 6 p.m., at the Hotel Windsor, when Mr. C. T. DRURY, V.M.H., will deliver a lecture on "Natural Marvels."

NATIONAL POTATO SOCIETY.—We are informed that the annual meeting of this Society will be held on Tuesday, December 10, at 3 p.m., at the Hotel Windsor, Victoria Street, S.W.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting will be held on Monday, December 9, 1907, when a paper will be read by Mr. GEORGE C. PHILLIPS (Professional Associate), entitled "The Calculation of Equivalent Manurial Values." The chair will be taken at 4 o'clock, this being one of two ordinary general meetings held for the convenience of country members in the afternoon instead of in the evening.

NATIONAL FRUIT GROWERS' FEDERATION.—A meeting of the council will be held at the Royal Horticultural Hall, Vincent Square, Westminster, on Monday, December 9, at 3 p.m.

THE SHOWS OF COLONIAL PRODUCTS AT WESTMINSTER.—Exhibitions of Colonial produce under the auspices of the Royal Horticultural Society now recur with fixed regularity, and their announcement has, for the past four years, occupied a prominent place in the Society's schedule of functions. In a letter addressed by the President and the Secretary to *The Times* it is stated that unless a greater appreciation is shown in them by the general public, the Council will not feel justified in continuing the unremunerative outlay which the exhibitions entail. Certainly no greater patronage was accorded the show held during Thursday and Friday of last week than previous ones. Apart from a passing interest, the Fellows of the Society generally do not concern themselves with displays of products which they can, if they choose, purchase from many of the larger emporiums. Nor is the public generally interested with varieties of Oranges and Sugars; these rather appeal to those persons whose business it is to place them before their customers, and who have to make a market for supplies from fresh sources. It is well known that in the marketing of any novelty, however good it may itself be, the public has to be educated as to its value over existing kinds. But the first person to interest is the retailer, and this fact seems to suggest that these shows of Colonial products, which are held with a view to finding a market for the wares exhibited, should be presented rather before an audience of greengrocers than casual sightseers. The samples of Apples from British Columbia would excite much more interest if they were displayed before an audience of Covent Garden market salesmen and buyers, and the proper place for exhibiting new samples of conserves and other comestibles is a grocer's exhibition. Once in a way, perhaps, an exhibition of this kind might be tolerated at Westminster; but to repeat them several times each year is to devote the energies of the Society in the wrong channel. In their letter the President and Secretary state that the subsidiary objects the Society have in view are, besides the primary one of wishing to aid the Colonies, an endeavour "to show the inhabitants of the Mother Country what splendid and varied supplies of fruit our Colonies can send us; to enable Colonial growers to discover which of their fruits are best suited for our British markets; the way in which the fruits should be packed, and the season at which they can most profitably be put upon the market, &c." All these, we believe, would be much better determined by the holding of shows at the principal fruit markets. The date of the show was specially selected to suit the season of Canadian

and West Indian produce, and exhibitors from these Colonies were the principal contributors. The finest display in the Hall was the exhibit of Apples from British Columbia, to which reference has already been made. Nothing finer amongst Apples has been seen in the Hall, judged from their external appearance. The fruits generally were coloured to a remarkable degree, and this quality was combined with clearness of skin and freshness of appearance. Some of the fruits appeared as though just gathered from the tree, with a heavier coating of "bloom" than is seen in our home-grown Apples. The variety Hubbardstone Nonsuch appealed to us as being an Apple of especially fine appearance, and another—McMahon's White—was of pale, wax-like appearance, flushed on one side with red, and in appearance we have nothing so beautiful amongst these fruits. Emperor Alexander, Yellow Ballflower (probably a corruption of our Yellow Bellefleur), Grimes' Golden Pippin, King of Tompkins' County, and Spitzenberg may also be instanced as fruits of remarkably fine appearance. A Gold Medal was awarded this exhibit. A similar award was conferred on a group of fruits, vegetables, conserves, &c., shown by the WEST INDIAN PRODUCE ASSOCIATION, LTD., 4, Fenchurch Buildings, London, and another to the WEST INDIA COMMITTEE for Citrus fruits, Colonial preserves, &c., contributed by Grenada, Jamaica, and Trinidad. Many fresh fruits from these latter Colonies were shown by the ROYAL MAIL STEAM PACKET CO., 18, Moorgate Street, London. The fruits included Oranges, Mangos, Grape Fruit, Shaddocks, Papaws, Cocoanuts, Bananas, Granadillas, Avacado Pears, Eddoes, Yams, Sapodillas, and many others. The GOVERNMENT OF NOVA SCOTIA staged an exhibit of Apples, exhibited as packed for market, in boxes and barrels. This was next to the exhibit from British Columbia in point of merit. The schedule made provision for competitive classes for bottled fruits, jams, &c., and in this connection demonstrations in fruit preserving were conducted by Miss EDITH BRADLEY, Bredon's Norton, Tewkesbury.

THE ANNUAL DINNER OF THE MEMBERS AND FRIENDS OF THE PUTNEY AND WANDSWORTH CHRYSANTHEMUM SOCIETY took place on the 28th ult. at Putney, about ninety ladies and gentlemen being present. It was pointed out by the treasurer that there was a very slight falling off in the number of exhibits at the recent show, but the society had not found any reason for trespassing on the reserve fund, and there was a small balance to the good on the year's account. Special prizes have already been promised for next year's show, which will be held in the Town Hall, Wandsworth. One of the speakers recommended that the committee would do well to omit several of the smaller classes and increase the value of the prizes offered in those that were retained. In order to attract the general public to the exhibition it was necessary to institute a strong open class that residents in the district might be given an opportunity of inspecting flowers of the highest quality obtainable.

PRESENTATION TO MR. WALTER P. WRIGHT.—The literary staff of *The Gardener* has recently presented Mr. WALTER P. WRIGHT with a polished walnut stationery cabinet on his resignation of the editorship of that journal, a position he has admirably filled since its inauguration nearly nine years ago. The cabinet is of foolscap size with folding doors, drawer, and screw top inkwells. A silver plate attached bears the following inscription: "Presented to Mr. WALTER P. WRIGHT by the literary staff of *The Gardener*, November 30, 1907."

THE FRANCO-BRITISH EXHIBITION, 1908.

There is every reason to expect that this exhibition, which will be held at Shepherd's Bush, a western suburb of London, will prove to be one of the greatest events of such a nature that have taken place in this country. Many of our readers are probably aware the project has received commendation from H.M. the King and the President of the French Republic, and the Governments of both countries are affording all the moral support they can. The exhibition is intended to cover the whole field of French and British industries, but we are naturally most interested in the sections for science, education, agriculture, horticulture, viticulture, arboriculture, forestry, &c. The chairman for horticulture and arboriculture is Lieut.-Col. D. PRAIN, Director of the Royal Gardens, Kew. We hope that the importance of British commercial horticulture will be adequately set forth, and the various chairmen of the sections we have mentioned will receive the support from the industries which they have every right to expect. Sir NORMAN LOCKYER is chairman of the scientific department, and a section for vegetable physiology and biology is placed in the charge of a sub-committee. Much good will doubtless be done by the efforts of the scientific workers in connection with the exhibition, but this section, perhaps more so than any other, will be likely to suffer from its limited scope, science having gained so much during recent years from the work done in German laboratories. The exhibition will be open to the public from the month of May until October.

BANANAS FOR CATTLE FEEDING.—The use of the Banana for any other purpose than that of human food would seem, in these days, when the fruit has become such a popular favourite, to savour at least of unpardonable extravagance, but in a recent number of the *Agricultural News* of Barbadoes we read that Mr. C. W. MEADEN, of the Government Farm, Trinidad, recommends, as the best way of utilising waste Bananas, that they should be ground up and given to live stock. He has followed this course himself, obtaining, as he says, satisfactory results. The Bananas are broken up in a root pulper, and some coconut or cottonseed meal together with a little molasses is added to the crushed fruit; this addition, apart from its own feeding value, corrects the astringent properties of the green Bananas. Mr. MEADEN says that the mixture is used to the best advantage when fed to milking cows, growing stock, and working oxen, and all these animals consume it with relish. It is not so suitable for mules or other stock, and if given to pigs or poultry it should first be cooked. Stock owners in Jamaica, too, have found this to be a good way of utilising their waste Bananas, and the practice has been followed in that island for many years. Another view of the Banana question is also given in the same number of the *Agricultural News* in a quotation from the *Fruit, Flower, and Vegetable Journal*, in which this latter journal resents some disparaging remarks that have appeared in some papers relating to the Jamaica Banana industry. It points out that the Jamaica Banana is essentially the popular variety of the fruit in England, inasmuch as there are thousands of people who cannot afford to pay the price of the more expensive Canary product, and who, but for the cheap and plentiful imports from Jamaica, would be unable to purchase Bananas at all. London takes a considerable quantity of Jamaica Bananas, but this is not to be compared with the enormous supplies consumed in the Midlands and North of England, where this fruit is largely appreciated by the thousands of factory hands in the big manufacturing towns.

DEATH OF LORD BATTERSEA.—The late Lord BATTERSEA, in his younger days, was well known to the horticultural world as Mr. CYRIL FLOWER. He showed at all times very great interest in gardening, and during the last 20 years has made the beautifying of his fine gardens at the Pleasaunce, Overstrand, Cromer, one of his chief pleasures. Latterly, during his declining health, he has found his greatest comfort in the gardens he had taken such pains to form. The rock garden, the water garden, the arrangement of Rose-covered pergolas, the excellent collections of herbaceous plants, shrubs, and trees were not only highly interesting and instructive to trained gardeners, but a source of delight to the thousands of visitors to the neighbourhood, for the grounds were thrown open to the public on Sundays during the summer months. The grounds were freely lent for fêtes and other events in the interests of the institutions and societies of the district. The horticultural charities claimed his lordship's personal interest, and on one occasion he presided at the festival dinner of the Royal Gardeners' Orphan Fund. Some idea of the work which has been done in bringing the gardens of the Pleasaunce to their present state of perfection may be gained when it is stated that 18 years ago there was not a tree on the site, which extends to the cliff above the sea. Lord BATTERSEA was born on August 30, 1843, educated at Harrow, and at Trinity College, Cambridge, and passed his younger days as a barrister-at-law. He died at Ryde, Isle of Wight, on November 27.

SULPHATE OF AMMONIA AND NITRATE OF SODA.—The quantity of sulphate of ammonia produced in England during the year 1906 was 239,391 tons, an increase of 20,000 tons over the figure for the preceding year. In 1906, nitrate of soda was imported to the extent of 108,486 tons, this quantity being 4,000 tons more than the imports in 1905.

VEGETATIVE PROPAGATION OF LEGUMINOUS FORAGE PLANTS.—From an article among the miscellaneous papers published by the U.S. Department of Agriculture, *Bulletin* No. 102, 1907, by J. M. WESTGATE and G. W. OLIVER, it appears that the necessity for isolation to prevent promiscuous pollination, and the time required to secure any considerable quantity of seed, have together served to seriously handicap the work of developing new strains of forage plants, especially the perennial legumes. The method of propagating forage plants by means of cuttings therein described has been worked out chiefly in the case of *Medicago sativa* and *Trifolium pratense*; but preliminary experiments indicate that it may be quite as successfully adapted to all dicotyledonous forage plants. In 1903 a plot of Peruvian Alfalfa in the garden of the Department of Agriculture proved resistant to the leaf spot disease (*Pseudopeziza medicaginis*), which nearly ruined the check plot of ordinary Alfalfa. Although the latter is non-hardy and is killed in winter, except in the Southern States, there were two plants which survived the severe winter of 1903 and 1904 in Washington, D.C. These points, together with the hairiness, leafiness, and vigorous growth of this variety, secured the attention of those interested in breeding Alfalfa. The plants were placed in large pots and moved to the greenhouse to be used in the hybridisation work inaugurated by Dr. B. T. GALLOWAY, who conceived the idea of raising a large number of plants of these two plants vegetatively, in order to produce a large quantity of seeds the same season. This was successfully accomplished by the method described in the *Bulletin* above mentioned. Cuttings are made of reasonably ripe stems taken from plants in the greenhouse. The cuttings are inserted in sand, and when the

largest roots are $\frac{3}{4}$ inch in length, they are transferred to 2-inch pots, and later to 3-inch pots. The size which the plants can attain in such pots without becoming pot-bound will permit them to be transplanted to the permanent nursery rows if the season be suitable, or to an outside frame to remain dormant till the spring, in case the cuttings are made during the winter. If greenhouse facilities are desirable, it is possible, with 30 square feet of greenhouse space and 90 square feet of cold frames, to secure in a single winter 1,000 plants from an Alfalfa plant of average size. The efficiency of the method is shown by the fact that at least 95 per cent. of Alfalfa cuttings become well rooted in the pots. The tops were cut back to 6 inches in height before being removed from the pots in the cold frames and planted in the nursery lines. In establishing new varieties of such leguminous forage plants as Alfalfa and Clover, it is sometimes desirable to start with a strain from a single individual, or at the best from a limited number of individuals. This is the case where an especially promising form is confined to so few plants that the problem of increasing the stock for further tests and possible introduction is a serious one. The several hundred plants which can be readily produced from the selected individual during the winter can be isolated by transfer to a considerable distance from other plants of the same or closely-related species.

PIMENTO IN TRINIDAD.—It is well known that the Pimento or Allspice tree (*Pimento officinalis*) is especially a Jamaica plant, from which island our supplies of the well-known berries are chiefly, if not exclusively, brought. The extension of its cultivation in Trinidad was commenced some ten years ago, when seeds were obtained from Jamaica, and a considerable number of plants raised. The present condition of these plants, and their future prospects, are referred to in the following paragraph from the last quarterly issue of the *Bulletin of Miscellaneous Information* of the Botanical Department of Trinidad. A section of land was planted at St. Clair, and for several years the trees grew well and produced seed, reaching some 20 feet in height. During the last two years these trees commenced to show signs of sickness, and during the past month of June several of them died. The situation is somewhat low, and is apparently too damp for the species, as on higher ground although the trees have not grown so fast they are perfectly healthy, and present characters much in common with those they show on Jamaica plantations. This is probably the cause of the extreme scarcity of this species in Trinidad where it is not indigenous, while its near ally, *Pimento acris*, is a common plant in many parts of the island, and so also is its variety *P. acris*, var. *atrifolia*. The ordinary *P. acris* produces bay oil, and by distillation the well-known bay rum is produced; its variety *citrifolia*, however, gives an essential oil having a distinct citron odour, which distinguishes it from that produced by the substantive species.

Publications Received. *Income Tax, and how to get it refunded.* Twentieth edition. By Alfred Chapman (Effingham Wilson & Co.), price 2s.—*Practical Advertising*, 1907-8, published by Mather & Crowther, Ltd., London.

THE HARDY FLOWER BORDER.

KNIPHOFIA MULTIFLORA.

WHEN first introduced into this country some seven years ago, this interesting and distinct species was treated as a cool greenhouse plant, which treatment was justified owing to its not flowering till the middle of November, a time of year when few plants look happy in bloom unless afforded protection of some sort. On being planted out in an open border, it has proved

to be quite as hardy as most of the other members of this attractive genus, and this year, owing to absence of frost, it flowered well outside. Its nearest ally in the genus is the pretty little *K. modesta*, and it is one of the few species with erect flowers. In appearance it may be said to somewhat resemble a small *Eremurus*, but the flowers are sessile and densely packed on a spike, which varies from 1 to 2 feet in length. The colour of the flowers is not attractive, being of a yellowish white tint. The plant grows from 3 to 6 feet high, with leaves of the same length, and are about 1 inch wide at the broadest part.

The native habitat of *K. multiflora* is in Natal, where it is found growing in swamps on the summit of the Drakensburg range of mountains, at an elevation of 5,000 to 6,000 feet. The plant, which flowered in the Cape House at Kew for the first time in November, 1900, was received from Herr Max Leichtlin, of Baden Baden, and it was figured at the time in the *Botanical Magazine*, tab. 7832.

Except in favourable situations in the southern counties, it is not a plant for growing outside, but needs protection in order to preserve the delicate flowers from injury.

WINTER-FLOWERING CROCUSES.

USUALLY associated with the early spring, the many kinds of *Crocus* now in cultivation have various times of flowering, so that the numerous species may be used to provide a succession of dainty flowers for fully eight months out of the year. The earliest of the autumn kinds, *C. Scharojani* and *C. vallicola*, flower in August, followed by the handsome *C. speciosus* and several others in September and October. These make a charming display at a dull time of the year, especially planted on grassy banks, where the grass does not grow too rank. It is in spring, however, that we get the greatest wealth of kinds in flower, which light up the garden in February and March with their rich and varied colours. Linking up these two great sections there are a few kinds which succeed the autumn-flowering species, and, weather permitting, continue blooming through the winter. In warm, sheltered spots they may be grown outside, but to have them in perfection they ought to be given the protection of a cold frame. Many of the autumn-blooming species, like *C. hadriaticus*, *C. cancellatus*, *C. lævigatus*, and *C. longiflorus* prolong their flowering period into December in mild weather, and it is well worth while using bell-glasses to protect the flowers from heavy rain and bad weather. Those species that flower in winter are:—

C. alatavicus, from Central Asia, which produces its flowers about the end of January. The inner petals are white, while the outer ones are very finely feathered and speckled with purplish-grey on the outside. It is a distinct but somewhat rare plant in gardens.

C. ancyrensis is a pretty species, with deep orange-yellow flowers, which sometimes bear rich brown markings.

C. biflorus is a beautiful species, of which there are many varieties. In some forms the markings are very rich and varied, the type having white flowers with lilac feathering on the outside segments. It comes into bloom in January. Some of the most distinct varieties are: var. *Adami*, pale self purple, or feathered with dark purple on the outer segments; var. *Pestalozzæ*, a dainty little flower, white, with a yellow base; var. *Weldenii*, white, shaded mauve or blue, and pure white.

C. caspius.—One of the finest white-flowered Crocuses, which has been recently introduced from the Caspian region. It sometimes flowers in November, and continues to do so until February. There is a variety of this which has the outer segments suffused with lilac.

C. hyemalis.—This winter-flowering species is a native of Palestine, and comes into bloom in December. It should be grown in pans in the Alpine house, and as the corms can be procured so cheaply, it is best to have a fresh stock every year, as they do not flower so well the second year in pans. The typical form should have yellow anthers, but most, if not all of the plants in cultivation are the var. *Foxii*, with black anthers. The flowers are white and veined or spotted with rich purple on the outside.

C. Imperati.—This Italian plant frequently comes into flower about Christmastime, but is at

its best near the end of January. It is a beautiful species, the outside of the rich purple flower being pale fawn colour, striped with brown. The leaves are very long, while the colour of the flowers vary considerably.

C. marathonisius.—This is another handsome white-flowered species, which was introduced into cultivation a few years ago by Herr Max Leichtlin. It is a robust grower, and is just coming into flower at the end of November.

C. vitellinus is a native of Asia Minor, with handsome orange-coloured flowers in January.



FIG. 163.—PART OF A POTATO PLANT SHOWING THE EFFECTS OF THE DISEASE BOTH ABOVE AND BELOW GROUND.

There is also a variety named graveolens, with brown markings on the outside segments.

The culture of the Crocus is very simple, as any light garden soil suits the corms. Their main requirements are a sunny position, and shelter from cutting winds. Shelter from rain in the form of a bell-glass or light would be a great advantage, in order to preserve their full beauty. W. Z.

VARIORUM.

THE USE OF ACCESSORIES.

SOME florists still think that because the leading florist in the town uses many more supplies, in proportion, than the others do, it is because he has the money to put into them. It is not that way at all. The man who makes the most free use of the things which add to the attractiveness of his stock is the one who gets the business, and any florist easily can demonstrate for himself how the use of suitable embellishments adds to his trade. For instance, take the item of Violet boxes. Some retailers still send out Violets in any sort of small box, but the one who knows his business has a stock of special Violet boxes, and usually he has more than one grade. It never fails that where one florist sends out Violets nicely put up in a box made for the purpose, and his neighbours use an ordinary box, or none at all, the trade soon gets all into the hands of the one who has the enterprise to do things right. What applies to the small matter of a few pennies for a Violet box applies to the larger items. No retailer can afford to send out anything but attractive packages. *Florists' Review, U.S.A.*

"BLACK SCAB" OR "WARTY DISEASE" OF POTATOS.

(CHRYSOPLYCTIS ENDOBIOTICA SCHILB.)

IN 1902 a new fungus disease of Potatos was recorded for England. Prof. M. C. Potter, of Armstrong College, Newcastle, gave an excellent and well-illustrated account of the fungus causing the disease, in the December number, 1902, of the *Journal of the Board of Agriculture*. In this article the fungus was correctly determined as *Chrysophlyctis endobiotica* Schilbersky, which had hitherto been known only from Upper Hungary, where it was originally discovered in 1896. In the same number of this *Journal*, the same disease was dealt with by Mr. Massee, who determined the fungus as *Ædomyces leproides* Trabut, a disease which had been recorded as attacking Beetroot in the grounds of the School of Agriculture at Rouiba, near Algiers. It subsequently became apparent that an error had been made in this identification, but the leaflet on "Black Scab" which is being distributed by the Board of Agriculture continues to perpetuate the mistake of identifying this new Potato disease with that of the Beetroot gall-fungus, *Ædomyces leproides*. The matter is of some economic importance, and I shall refer to it again later.

Although this "Black Scab" disease was recognised on its first appearance as being of a dangerous nature, no systematic steps have been taken to eradicate it, or to stop it spreading through this country. I have lately collected information from reliable sources, and received a large number of specimens from various districts, which show clearly the dangerous nature of the disease. It is evident, too, that the disease is slowly and surely spreading from county to county. It will be best to give the facts bearing on these points under the various counties from which the disease has been recorded, but before doing so, the disease and the fungus which causes it must first be described.

Photographs of Potatos attacked by the "Black Scab" fungus are shown in figs. 163, 164. The normal growth of the tuber is altered under the irritation caused by the attacks of the fungus, with the result that warty irregularly wrinkled and convoluted "gall"-like outgrowths or excrescences are produced at the expense of the growing tuber. Sometimes the young tuber is entirely transformed into a useless wrinkled mass, which soon decays and turns into a rotten and pulpy mass. At other times lateral or terminal "gall"-like excrescences are borne by otherwise sound and normal tubers; not infrequently these excrescences are larger than the tuber itself. More rarely lateral shoots of the stem above ground are attacked, and transformed into a little dense bunch of minute leaflike outgrowths, resembling on a small scale the curled leaf of a Savoy Cabbage; an attacked lateral shoot is shown in fig. 163 above. The "eye" of the tuber appears to be the part first attacked. If all the growing "eyes" of the "seed" tuber are attacked, no crop at all is obtained.

If we cut across any of these warty outgrowths at the time when the Potatos are dug, and place a section under the microscope, the fungus can be easily seen. There will be found, embedded in the flesh of the Potato close to the surface, an enormous number of comparatively large, round, brown "resting spores," about 60 μ in diameter* (see figs. 165, 166). No fungus spawn (mycelium) is to be seen at this stage or at any time. Earlier in the season the fungus exists as a little naked mass of living substance, known as protoplasm, in the cells of the flesh of the tuber. This is known as the plasmodium stage. The fungus in its plasmodium stage moves

* The germination of these "resting spores" has not yet been observed. It seems probable that they are in reality sporangia, and that on germination they set free "swarm spores" in the soil. They function, however, as "resting spores."

about during the summer months from cell to cell, feeding on their contents, and irritating the cells of the surrounding tissue to abnormal growth, so that the characteristic warty excrescences are formed. At the end of the growing season, the protoplasm of the fungus in each cell contracts into a globular mass and surrounds itself with a thick wall, and thus becomes a "resting spore," such as those shown in figs. 165 and 166. These "resting spores" on the rotting of the diseased tubers are set free in the soil, and remain there ready to attack the crop of the next season. Prof. M. C. Potter has demonstrated by inoculation-experiments that these spores can remain resting in the soil over two years, and then attack the crop in the third year. Mr. J. W. Eastham has the following interesting note on the prolonged vitality of the spores: "When once established in the land, it is useless to grow Potatos again until the pest has been starved out or otherwise destroyed: but, so far as is known, no other crops are liable to be attacked. Quite the worst case seen in Cheshire occurred on land that had not borne Potatos for six years; "seed" from the same source as that employed on this land yielded satisfactory results elsewhere, indicating that spores were not introduced by the seed, whilst the manure employed started no infection elsewhere. This indicates prolonged vitality on the part of the fungus, which would render starving out a very tedious process."

It is quite clear therefore that all diseased tubers should be carefully collected and burnt. In Mr. Massee's article in the *Journal of the Board of Agriculture* for 1904, p. 307, the advice is given that, as an alternative treatment, diseased tubers should be "deeply buried." In my opinion this advice should never have been given. Mr. Massee brings forward no evidence



FIG. 164.—POTATO-TUBER INFECTED WITH "BLACK SCAB" (CHRYSOPLYCTIS ENDOBIOTICA, SCHILB.).

that deep burying would kill the spores, and it is improbable that this is the case; there would be the danger, too, of diseased material or infected soil being brought to the surface by moles or worms.

Diseased tubers should on no account be fed to stock, as the spores would not be injured by passing through the intestinal canal of the animal, and would eventually be returned to the land with the manure.

We will proceed now to consider the present distribution of the disease, and the injury it has inflicted on the crop in various districts.

Cheshire.—Mr. J. W. Eastham has written (in the Year Book of the College of Agriculture, Holmes Chapel, for 1904) of the serious nature of the present disease, which appears to be not only very well established but spreading in Cheshire. "The first recorded case of attack in this county was in 1900, when a field of Potatos was destroyed near Birkenhead. I am informed, however, that so long ago as 1896 specimens of tubers affected were sent to the College from

I believe I was one of the first to have attention called to it. This was in 1901 or 1902, when I sent specimens to London to Mr. W. Carruthers. These specimens I found in a garden just outside the town of Dolgelly; this garden was then in the occupation of one of the station-masters, and, so far as I know, was the only place where the disease had then made its appearance. I have made enquiries every year since. The disease is still in this garden. Last year it was also prevalent in another garden about a quarter-mile away from the first one. I was told that the disease had appeared on a farm some distance from the town." Writing later, Prof. Bryner Jones reported: "Since I received your letter, I have made further enquiries and visited some places in the Dolgelly district, and I am sorry to say that I find the disease is spreading. It is still to be found in the garden (mentioned above) where it first occurred; for the last two years there has been a good deal of it in another garden which is let in allotments about a quarter of a mile from the first garden. This year I have found it in a third garden on the opposite side of the valley, and about a mile from the town. Here, so far as I am aware, it did not appear before this year. There

is a little of the disease in a farm also about a quarter of a mile further up, but I could not discover any connection between the two places. In the case of the farm, the 'seed' was their own, grown one year on the farm, and last year there was no disease. In the case of the third garden, above referred to, where the disease is very bad, the 'seed' was obtained from a provision merchant in the town, whom I have not yet seen to make enquiries of. The owner of the garden tells me that the disease is much worse in the part of the garden planted with this man's seed than it is in another portion of the garden planted with different seed. Its origin seems very mysterious, and it will take a good deal of investigating. I am informed that the disease has also appeared at Fettiog. I am greatly interested in the matter, and somewhat concerned to see the way in which the disease is spreading. I have already acquainted the Board of Agriculture with the fact that it is spreading."

Nottinghamshire.

Mr. Geo. Gordon, at a meeting of the Royal Horticultural Society on October 13, 1903, reported that the present disease "had completely destroyed crops in allotments in Notts." Through Mr. Gordon's help I have been put into correspondence with a grower at Annesley, Notts., who writes as follows: "The disease is spreading each year. It broke out here in a few allotments six or seven years ago, and now scarcely one is free, and there are about 185 of them in our little village. These allotments are from 500 to 1,000 square yards, and some of the occupiers cannot

find Potatos in plenty for 'the family' for the winter and spring months, whereas a few years ago the cottager would have abundance. The tubers when dug (freshly) present the appearance of beautiful miniature Cauliflowers; tubers only 2 ozs. in weight will produce protuberances twice their size." Writing later, my correspondent adds: "There is no doubt in my mind as to the way the pest found its way here. It would be conveyed from Hungary to Germany, thence to London, then to the provincial towns—Nottingham for one. Then it would be brought round by costers into our village, and the 'seed' would be planted by many. The disease attacks Up-to-Date, Factor, British Queen, Scottish Triumph, and many other varieties."

Westmorland.—Prof. M. C. Potter writes to me that he observed the disease at Ambleside last July. (See also below under Cumberland.)

Lancashire.—Mr. Carruthers has recorded the occurrence of the disease "in Lancashire." The tubers were "completely destroyed."

Cumberland.—The disease is recorded in the October number of the *Journal of the Board of Agriculture* from Bootle. In the *Gardeners' Chronicle* for October 26 last, Mr. J. G. Murray reported a very severe outbreak upon about a dozen allotment gardens near Carlisle. In a recent letter, Mr. Murray writes: "I have had reports concerning the disease from four centres in Cumberland and Westmorland."

Perthshire.—In the October number of the *Journal of the Board of Agriculture* the disease is reported from Crieff. No details are given of the outbreak.

Soon after the determination of this Potato disease by Mr. Massee as being identical with the Beetroot fungus, *Edomyces leproides* Trabut, a statement was made by Dr. M. C. Cooke in the present journal to the effect that he had been assured by someone that Dr. P. Magnus, of Berlin—an authority on this group of fungi—had acquiesced in the determination. Immediately on this statement being published, Prof. Magnus wrote to the papers contradicting it, and pointing out that from the published description given Chrysophlyctis



FIG. 165.—SECTION OF AN OUT-GROWTH ON A DISEASED POTATO, SHOWING THE SPORES IN THE FLESH OF THE POTATO. (SLIGHTLY MAGNIFIED.)

Cheshire, but nothing was then known concerning it. In a mild attack the tubers are disfigured, but not seriously damaged, and their keeping powers are not injured. In a severe attack, however, the tubers are practically worthless, while if the young sprouts of the seed should be affected, the growth of that plant may be entirely stopped, and no tubers at all produced." Mr. W. Neild, lecturer in horticulture at the Holmes Chapel Agricultural College, has very kindly supplied me with the following notes: "I have to report that the disease is spreading and the damage done is very considerable. The fungus is spreading through the distribution of affected seed, and growers whose crops have suffered from it either don't or won't admit its presence on their holding as it would militate against the sale of 'seed.' I first heard of it in 1895, and the following year specimens were sent to me; these I forwarded to London, but nothing appeared to be known there about it. It is generally believed in Cheshire that it was introduced to this country by the cattle-boats from the Continent arriving at Birkenhead. The worst case I have seen was in a field of about three acres quite near to the College; the variety was Up-to-Date, and nearly every tuber was more or less affected, about one-third of the crop being rendered quite useless. In another instance the Eldorado suffered very extensively." Writing later, Mr. Neild reported: "I have just met with a very bad case. The field in which the disease occurred had been pasture, which was broken up last year; area, 6 acres; variety, Up-to-Date. The haulm was strong, but the crop was not worth harvesting, as every tuber was affected with disease. I may add that cottagers and others who have known the disease long before it was designated 'Black Scab' know it by the name of 'Cauliflower disease,' doubtless owing to the outgrowths bearing some slight resemblance to a Cauliflower."

Merionethshire.—Prof. C. Bryner Jones, of University College, Aberystwyth, has very kindly supplied me with the following notes on the occurrence of the disease in Merionethshire. It is a highly interesting case, and illustrates how a new pest, when once introduced, if left to itself, will slowly and surely get hold of a district. Prof. Bryner Jones writes: "I have personally only come across the disease in one locality in North Wales, viz., Dolgelly, in Merionethshire:

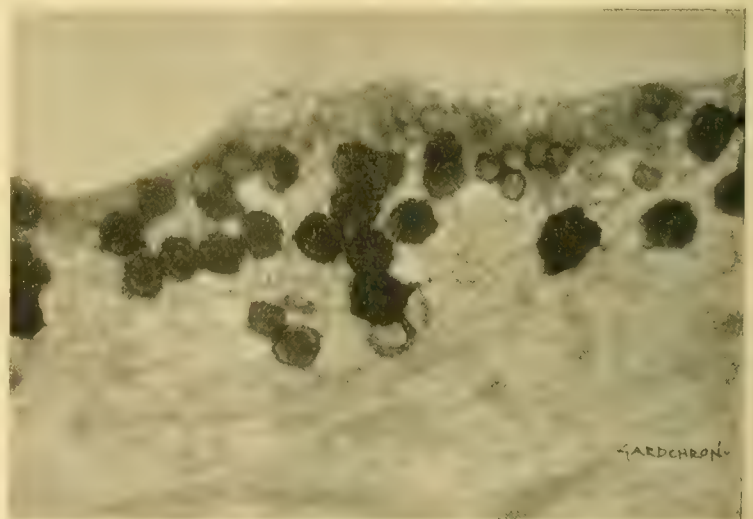


FIG. 166.—SECTION THROUGH AN OUT-GROWTH SHOWING THE SPORES OF THE FUNGUS. (HIGHLY MAGNIFIED.)

sophlyctis was evidently distinct from the Beetroot fungus, *Edomyces*. Later, Prof. Magnus, having seen specimens of the present disease, has pointed out that the fungi causing the two diseases are perfectly distinct, and belong to two different genera. Unfortunately the confusion has been made more serious by the erroneous statement which appears in the Board of Agriculture's leaflet (No. 105) on "Black Scab," that "*Edomyces leproides* Trabut = *Chrysophlyctis endobiotica* Schilb." The Board of Agriculture

should in the next issue of their leaflet delete the name of *Ædomyces leproides*.

A most important question from the economic point of view is whether this new disease of Potatos can attack other plants. Mr. Massee, in the Board's leaflet, where, as mentioned above, the fungus is determined as the same as the Beetroot disease, states that "both Beet and Mangold are liable to be attacked." As no detailed account of the inoculation experiments on Beet and Mangold have been published, I wrote lately to Kew for information on the point, and received the following reply: "Seedlings of Beet and Mangold in soil infected with material obtained from Potatos were attacked and destroyed. Resting spores were formed in the tissues of both Beet and Mangold. No independent announcement of the above observation has or will be made."

If we turn to Mr. Massee's account of the present disease,* we find that it is stated that the present Potato disease "proved on microscopical examination to be identical with the one attacking Beetroot as described above." Now Mr. Massee describes the outgrowths produced on Beet as "containing numerous irregularly-shaped cavities filled with the dark-coloured resting spores of the fungus." But in the Potato disease we do not find "irregularly-shaped cavities filled with spores," but, as Prof. Potter has pointed out, the spores are scattered in the cells of the tuber near the periphery. How, then, is it possible to maintain that the two diseases are microscopically identical? When we come to consider the spores, a graver discrepancy occurs. Mr. Massee figures, as coming from a diseased Potato, some spores which show a lateral depression; but, as Prof. Potter and Prof. Magnus point out, the spores do not show this character, while it is found in the quite distinct disease of the Beetroot. It is the very reverse of scientific treatment to attempt to remedy these discrepancies by stating, as is done in the Board's leaflet, that the Potato disease, *Chrysophlyctis endobiotica*, is to be considered as a synonym of the Beetroot disease, *Ædomyces leproides*.

According to the Kew experiments, spores obtained from Potatos infected and killed Beet and Mangold, and resting spores were formed in the tissue of these plants. It is a point of scientific and economic interest to know whether these spores possessed the lateral depression and other distinctive characters of the Beetroot disease—that is, whether they resembled the spores of *Ædomyces* or *Chrysophlyctis*, as in the latter case it is clear that the Beetroot has two distinct diseases. Perhaps Mr. Massee will make clear these points in these columns.

The time is now at hand when Potato growers with land infested with spores of the "Black Scab" will be forced to grow other crops for a number of years, and it is of public importance that the scientific details of the inoculation experiments, on which the Board of Agriculture rely for the statement (published in their leaflet) that Beet and Mangold are liable to be attacked, should be published.

We now come to the consideration of the last point: what steps ought to be taken to prevent this new Potato disease spreading through the country?

There is a consensus of scientific opinion as to the dangerous nature of the disease. Prof. M. C. Potter has written: "From my observations it is evidently a very destructive parasite, which possesses most effective means of spreading itself if only opportunity offers. As, so far, it appears to be of local occurrence, it is of the highest importance to stamp it out before it obtains a firm foothold in this country. The attacked Potatos should in no case be allowed to pass out of an infected district or be used for 'seed.' It is worth while taking every possible precaution to check this parasite, which

otherwise might ensure for itself a wide distribution and cause very considerable damage."

The opinions of Mr. J. W. Eastham, Mr. W. Neild, and Prof. C. Bryner Jones, who have all had practical experience of the disease, is given above. Mr. Massee has even written: "This disease, although only quite recently imported from the Continent, threatens to be quite as destructive to Potatos as the old-established disease." If we consider what these words really mean, and the devastation and famine that would result—supposing this estimate of the dangerous nature of the disease to be correct—if this new pest should gain admission into Ireland, it seems almost incredible that the Board of Agriculture should have taken no steps, beyond the issue of a leaflet, to deal with the disease. But, considering that the present "Black Scab" disease has no aerial form of fructification, and so cannot spread above ground like the Potato "blight" (*Phytophthora infestans*), which extends in a few days through a whole field by means of its wind-borne spores, the two diseases cannot, in my opinion, be thus compared, and we must hope that for once Mr. Massee may be regarded as somewhat of an alarmist and as exaggerating the spreading powers of the disease.

It is quite clear, however, that the "Black Scab" disease threatens to inflict such serious injury on the Potato crop as to warrant the Board of Agriculture taking official action. The Board now possess the necessary legislative powers under the "Destructive Insects and Pests Act," which became law last July. The disease is viewed with alarm by both the scientific and the practical man, and yet no steps are being taken to deal with this pest, which, if it is allowed to spread through the country and to reach Ireland, will cause losses of hundreds of thousands of pound. Now that the disease is reported from Perthshire, it can only be a matter of time, if the agricultural authorities continue to remain inactive, before the disease is distributed by Scotch "seed" over the whole country.

Since this disease has only quite recently been imported into this country from the Continent, and is at present confined to a comparatively small area, it is eminently a disease to be dealt with by legislative measures. It is perfectly clear that growers will continue to send the disease about the country by means of diseased "seed," unless it is made a punishable offence to do so. The spread of this new disease can only be prevented by the affected areas being kept under the supervision of a competent inspector. The disease should be dealt with as the Colorado Beetle was dealt with, and Potato growers should unite in demanding from the first that some compensation from Treasury funds is paid for partly-diseased crops which are destroyed, as was provided in the Colorado Beetle Act of 1877.

From past experience, it seems hopeless to expect the Board of Agriculture to act on their own initiative in dealing with any newly introduced plant disease, and I would therefore strongly recommend all Potato growers and merchants, farmers, market gardeners, and allotment holders to unite in sending resolutions to the Board, urging them to take immediate steps to eradicate this new pest, or at least prevent it spreading all over the country.

The essence of the scientific treatment of epidemic plant diseases is to apply the remedy at the start. A conspicuous instance of the danger of neglecting this principle can be seen in the present situation with regards to the American Gooseberry-mildew. The Board knew of outbreaks of this disease in 1900, yet took no steps to deal with this pest until seven years afterwards, with the result that they have now to deal with some hundreds of acres of Gooseberry plantations infested with this most infectious mildew. The Board knew in 1901 of the introduction into this country of the "Black

Scab" of Potatos. Since 1901 the disease, as the above evidence from the various counties shows, has been slowly and surely extending its area. No effort should be spared by all those who are interested in Potato growing to urge the Board to take the steps necessary for the suppression of the disease before it is too late. *E. S. Salmon, F.L.S., Mycologist to the South-Eastern Agricultural College, Wye, Kent*

GRAFTING TEA ROSES.

The grafting of Roses in pots under glass is a method of quickly and economically multiplying Rose plants, especially those of tender constitution which cannot be relied upon to withstand a severe winter if budded in the open ground.

The best month to commence this method of propagation is November, and the work may be continued through the winter months. The most satisfactory stock for this purpose is *Rosa canina* (the Dog Rose), although some varieties succeed on the Brier stock raised from cuttings. The seed of *Rosa canina* requires to be sown at least two years before the stocks will be worked, but the cutting-Brier stock is ready for use the season after it is rooted. When the stocks are about half-an-inch in circumference, they should be sorted, and the best of them potted into 3-inch pots. When potted, the plants should be plunged in the open ground in order to enable them to develop a good root-system, which is an important factor for success. Another system consists in taking the stocks direct from the ground, cutting back the "heads," trimming the roots, and potting them into 3-inch pots in October or November.

They should afterwards be placed in a warm frame for a fortnight, and then removed into the propagating house to encourage the development of roots, and, as soon as this forms, the stocks are ready for grafting. It is necessary in grafting that the sap in the stock be more active than that in the scion.

There are various types of propagating pits, but the two main requirements are that they can be kept close and have a bottom heat of from 60° to 65°. A layer of cocoanut fibre or ashes should be spread over the bottom of the frame. The scions should, if possible, be obtained from plants that have been grown under glass, for these shoots will be in a riper condition than those that are taken from plants outside. If the grafts have to be secured from plants in the open, they should be severed from the bushes with a sharp knife, and be placed in bundles of separate varieties, stood upright in a box in a cold shed, and be covered with sand, in which position they will keep fresh for a long time.

Among the many methods of grafting, the whip and rind system are to be recommended for Roses. In whip grafting the scion should be cut behind the bud and about half-an-inch below it: it is only necessary that the scion should have one bud or "eye."

Rind-grafting should be practised if the scion is "weak," or it may be used for the grafting of new and choice varieties.

For whip-grafting stocks should be chosen which correspond as nearly as possible in thickness to the scions, whilst for rind-grafting it is necessary that the stock be thicker than the graft. When the grafting is completed, the plants must be kept in a close atmosphere in the frames, but it is necessary to wipe off the moisture that condenses on the sashes at least once each day, preferably in the early morning, and the sashes should be entirely removed for a space of about half-hour to allow any water which has condensed on the plants to evaporate. As the union between stock and scion takes place, and the buds break forth into leaf, the length of time the sashes are removed should be increased until the plants are hardened sufficiently to be removed from the propagating cases.

* *Journal of the Board of Agriculture*—December, 1902.

For about a fortnight afterwards they should occupy an open position in the same house in which they have been reared. When the growths are about 6 or 8 inches long, it is advisable to stop them. This will cause the buds below to break into growth, and thus form a bushy habited plant. By this system healthy plants can be produced in the short space of from six to nine months. *W. B. Little.*

GOOSEBERRY WHINHAM'S INDUSTRY.

THE excellent photograph of this variety of Gooseberry, which has been sent us by a correspondent (see fig. 167), will serve to remind cultivators of one of the best cropping sorts obtainable. At the present season, when planting operations are being carried out, the hint is appropriate.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

GRAPES AT THE SHREWSBURY SHOW.—The suggestions on p. 379 of the last issue are worth consideration by the committee of the Shropshire Society. The number of gardeners who would be in a position to exhibit three or six bunches in one or two seasonable varieties would be much greater than the number of exhibitors who can exhibit 12 bunches. If memory serves me rightly, at the last show there were 15 competitors in the pair and single bunch classes for Black Hamburgs. The varieties selected by your correspondent are worthy the proposed honour. Naturally a first prize winner would like a permanent memento of his victory, but at the same time would like some means wherewith to meet the expenses. What does your correspondent think of a small gold medal with a cash prize added? *Exhibitor.*

LATE PEAS.—I gathered a dish of splendid garden Peas on November 30. The variety is known as Favourite. *Harold Reeves, of Messrs. Letts & Harding, Nurserymen, West Haddon, Rugby.*

QUESTION-NIGHT AT DEBATING SOCIETIES.—Any departure from the ordinary procedure at Gardeners' Mutual Improvement societies or similar horticultural bodies where lectures or addresses are habitually given is most welcome. As a rule the world is being talked at too much, and it rebels sometimes and refuses to listen. The committee of the Kingston Society readily accepted the suggestion to devote one ordinary meeting of the members this session to debating anonymous questions sent in on paper by the members. That practice was adopted at a recent meeting, and proved to be singularly successful. Mr. E. H. Jenkins and his valued knowledge was well tested by the questions, some 25 in number, put before the meeting. The range of questions was very wide, and included such topics as the Gooseberry-mildew, selection of flowering shrubs, bolting Cabbages, nomenclature of Hellebores, establishing newly-imported Japanese Lilies, winter Begonias, Potato failures from home-grown seed-tubers, and good growth from northern or Irish seed-tubers, Peach fruits decaying ere ripe, the silver leaf fungus, sportiveness of Sweet Peas, Cabbage clubbing and remedies, stocks for climbing Roses, terms as applied to diverse forms of foliage, grafting Chrysanthemums, and many other subjects. Not merely was there great educational value attaching to the proceedings, but the interest of the members was more fully aroused than is seen when one subject only is discussed. Those secretaries who find it difficult to fill their programmes with lectures should find "question night" specially helpful. A member mentioned, in reference to grafting Chrysanthemums, that he had seen in Paris a monster plant, 9 feet over, and carrying 750 disbudded flowers, all from grafts, worked on to a five-year-old stock of *Chrysanthemum frutescens*. The variety was Tokio. The employment of the French Marguerite as a stock for such purposes seemed to be regarded as a very unusual or novel procedure. *A. D.*

COLOUR VARIATION IN CHRYSANTHEMUMS.—I note an interesting communication in the issue of the *Gardeners' Chronicle* for October 10 on this subject from Mr. H. Cowley, in which he states that his results show "how impossible it is to conform this work to any law." How so? For the simple reason that the alleged laws put forward by Mendelian advocates on this subject are faulty and incomplete. In truth the word "law" should never have been applied to them. They cannot even be fairly termed "the allegations of human experience," for it is owing to the paucity and to the restricted field of Mendelian experiment that any general claim ever came to be advanced on their behalf. Their theory of colour variation was founded on insufficient data, and received its final overthrow at the third International Conference on Genetics held by the Royal Horticultural

Horticultural Society. First let us get some tolerable approximations, test these by general experiment, and then the time may have arrived for formulating some hypothesis. But to draft a "law" first, and afterwards test its verity, is not scientific procedure. On the subject of "sports," dealt with by Mr. Cowley, if he cares to look up the paragraphs on "species" which were added as an addenda to my *Concepts of Monism* (Unwin), he may find it interesting. *A. Worsley.*

FLORAL COMMITTEE EXHIBITS AT THE R.H.S. MEETINGS.—As a rule the most interesting plants or flowers seen at the R.H.S. meetings are those placed before the Floral Committee for awards. These novelties have special interest, because they are presented for awards as improvements on existing kinds. But be-



[Photograph by C. Jones.]

FIG. 167. A FINE SPRAY OF FRUITS OF GOOSEBERRY "WHINHAM'S INDUSTRY," A RED-COLOURED VARIETY OF HIGH MERIT.

Society at Westminster in 1906. Here it was clearly shown that their allegations as to colour variation were not true in any general sense, although in some particular instances they received confirmation. To-day we are still unable to foretell with certainty what the colour analysis of a cross will yield (with some possible exceptions in Sweet Peas, Antirrhinums, &c.), but we do know with certainty what a cross cannot yield in the way of colour. The results given by Mr. Cowley differ in no respect from those of many other experiments in Chrysanthemums and in other genera which have come under my observation, and on which I have prepared some memoranda for presentation to the Scientific Committee of the Royal

Society. First let us get some tolerable approximations, test these by general experiment, and then the time may have arrived for formulating some hypothesis. But to draft a "law" first, and afterwards test its verity, is not scientific procedure. On the subject of "sports," dealt with by Mr. Cowley, if he cares to look up the paragraphs on "species" which were added as an addenda to my *Concepts of Monism* (Unwin), he may find it interesting. *A. Worsley.*

cause the Floral Committee meet upstairs, few Fellows or visitors to the meetings find their way to the committee room, and thus they fail to see them. Some time after the Floral Committee has risen, exhibitors or their assistants bring down these special exhibits and put them about all over the hall. Cannot the society's officials be instructed to have them removed to one or other of the recesses, where there is always ample room, as fast as the subjects are dealt with by the committee? All persons interested could then soon find these novelties. The Orchids and fruits placed before their respective committees can always easily be found in the hall. *Visitor.*

THE CULTURE OF COCKSCOMBS (CELOSIA CRISTATA).—Having perused with interest the notes on the cultivation of the Cockscumb, I desire to say that the method recommended by Mr. Francis (see p. 326) corresponds with that which I practise myself. In the first place, it is necessary to procure seeds of a good strain, as cultivation will tend to improve a good strain, but scarcely make a bad one satisfactory. When my plants were in small 60's I kept the roots on the dry side in order to induce the plants to show their "combs" early, so that I could select the best for potting on. I used good loam, rich decayed manure, leaf-mould, and a good sprinkling of sharp sand for the final potting into pots 8 inches in diameter. At every shift I let the roots down to the bottom of the pot to keep the plants dwarf, so that when at their best they were not more than 6 inches from the rim of the pot to the top of the comb. Once when I had a faulty flower bed I plunged some Cockscombs in an existing groundwork of *Mesembryanthemum cordifolium variegatum*, and very well they answered my purpose for a time. *George Potts, Woodcoteside, Epsom.*

May I point out to Mr. Lockie that I did not say—"The plants should be placed on a dry shelf in the hothouse"? What I did say was—"The plants should be removed to a drier part of the house" (see p. 362). I would strongly recommend Mr. Lockie to follow during the coming season the hints I have given. *Thos. Francis, The Gardens, Rockwood House, Bolton-le-Moors.*

ANTHRACITE COAL.—According to my experience in the use of anthracite coal for horticultural purposes, it matters little what the size of the boiler is, provided the character of the fuel is rightly understood by the stoker. I began using the large vein anthracite coal somewhere about the year 1876 or 1877, with no previous knowledge of its peculiarities, in order to heat two ordinary flued saddle boilers only 24 inches long. Not much success resulted at the start, for these two small boilers were set in a stokehole under the stove-house, the only entrance being a small door 3 feet in width, and the chimney stack not being very high, draught through the furnace was not very great. The stoking was done in the same manner as for ordinary coal fuel, such as is used in the neighbourhood of collieries; but the entire mass turned black and dead when interfered with. It is in this direction that the beginner must take his first lesson, for whether this particular coal is cheap or dear in any class of boiler depends not a little upon the stoker. By continuously raking and disturbing a fire of anthracite coal, not only is an indifferent heat evolved, but a very considerable proportion of the fuel is riddled through the firebars and remains thus unconsumed. In order to obtain the best results with this fuel in any type of boiler, quite apart from the question of price, it must be allowed to do its work undisturbed. By proper regulation of the damper, &c., a fire of anthracite coal will endure from 12 to 20 hours without attention. I have known such fires to last in an excellent condition for 22 hours and longer during February and March, when a bitter east wind has been blowing. In this particular instance three boilers were working together; two of these were of the saddle pattern, 30 inches long, the third being of a larger size, with 3,000 feet of piping attached to it. In the case of these smaller boilers, 15 hours was the maximum time that they could be left unattended. The chief value of this coal, therefore, lies in its great durability, but to this must be added, that when intelligently used, there are no clinkers and very little ash. Further, there is an entire absence of sulphurous fumes such as are given off by coke, also there is a saving in labour, and a minimum of night stoking, together with the practical certainty of ensuring a uniform temperature. At this time of the year a fire of anthracite coal may be made up at 5 p.m., and beyond an occasional attention to the damper or ash-pit door, in the event of a sudden change in the weather outside, no attention is required before 6.30 a.m. the day following. In the breaking of anthracite coal the spike or chisel end of the hammer can be best used, in order to prevent it being broken too small. With a good draught at command, the chief item in success with anthracite coal is to "let it alone." *E. Jenkins.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

NOVEMBER 27.—*Present:* Mr. A. E. Bowles, M.A., F.L.S. (in the Chair); Messrs. E. M. Holmes, G. S. Saunders, A. Worsley, W. C. Worsdell, J. Odell, F. J. Baker, G. Gordon, W. Cuthbertson, and F. J. Chittenden (hon. sec.). Visitor, Mr. Gurney Wilson.

Hybrid Orchids.—Mr. CHAPMAN showed the result of a cross between *Cypripedium insigne* Sanderæ and *C. callosum* Sanderæ having coloured flowers. Over one hundred plants of this cross had flowered, and each of them had borne coloured flowers, although the parents were albinos. The cross had been effected both ways with the same result. The two albinos breed true from seed. The flower of the particular specimen exhibited was coloured much in the same way as those of the type forms of the species, and bore great resemblance to *C. Leonia* (*C. insigne* × *C. callosum*). He also showed a plant with a coloured flower, the result of crossing the albino forms *C. callosum* Sanderæ and *C. bellatulum* album; about 25 plants of this cross had flowered, and all had borne coloured plants. A third plant bore a great resemblance to *C. insigne* Sanderæ, and had been raised by crossing that form with *C. Leeanum giganteum* (= *C. insigne* × *C. Spicerianum*); of the offspring of this cross some reverted to the *insigne* type, but one was much lighter, and was crossed again with *C. insigne* Sanderæ, giving *C. × San-Actæus*. This was again crossed with *C. insigne* Sanderæ, and the plant under notice was the result. The continued crosses had almost brought back the original *C. insigne* Sanderæ. This form had in its composition, said Mr. CHAPMAN, 14/16 *C. insigne* Sanderæ, 1/16 normal *C. insigne*, and 1/16 *C. Spicerianum*.

Orchids and Fungi.—Mr. GURNEY WILSON referred to the theory brought forward by Prof. NOEL BERNARD concerning symbiosis between the Orchids and certain fungi (see Genetic Conference Report, p. 392). He, working in conjunction with Dr. FULTON, had not been able to verify the observation Prof. NOEL BERNARD had made. He had recently placed a large number of imported *Odontoglossum crispum* in contact with some Oak leaves which had been thoroughly dried for some months; a fungus had certainly developed upon them, but it had turned out to be the common Mushroom, and the mycelium had undoubtedly been on the Oak leaves.

Saxifraga Cotyledon.—Mr. SAUNDERS showed from Mr. A. O. WALKER, F.R.H.S., a specimen of this plant in which the flowers had been replaced by terminal rosettes of foliage leaves, somewhat similar to the plant sent some time since by Mr. JENKINS.

Erigeron Ryegrass.—Mr. BAKER drew attention to the remarkably frequent occurrence of this fungus in this and the past few years in North Kent on Ryegrass and some other wild Grasses. Mr. ODELL said that close feeding and the cleaning of ditches and headlands was the best means of eradicating the fungus.

Mollined Orchid.—Mr. ODELL showed a specimen of the Orchid *Selenipedium calurum*, in which the lateral petals were completely suppressed, while the dorsal sepal was much reduced and malformed. A similar condition is frequently seen in *S. Sedeni*.

Chrysanthemum indicum Hybrid.—Mr. SMITH, of Weybridge, exhibited flowers of hybrids between *C. indicum* and cultivated forms. These were retained for further examination.

Diseased Fern. Mr. MASSEE reported that he found abundance of mycelium on the brown spots on the *Todea* leaves but no fruit; the fungus was therefore indeterminable. The rhizomorphs shown at the last meeting were those of *Armillaria mellea*.

NATIONAL CHRYSANTHEMUM.

DECEMBER 4, 5.—The early winter exhibition of the above Society was held on these dates at the Crystal Palace, Sydenham. The number of entries was much larger than at the corresponding show of last year, the figures being 120 and 75 respectively. The larger classes

brought forth some spirited competitions, the flowers generally being of superior quality. The Incurred blooms were equal in point of quality to those seen at the November show, and they were more numerous than on that occasion.

Miss WILLMOTT was a very successful exhibitor in the principal classes for both Japanese and Incurred varieties. Several novelties were presented for awards, and of these two varieties of the single-flowered type received the Society's First-Class Certificate.

The weather on the opening day was wet and cold; the attendance of the public was small.

CHRYSANTHEMUMS DISPLAYED ON BOARDS.

OPEN CLASSES.

The most important class for Japanese Chrysanthemums was that for 18 blooms in not fewer than 12 varieties. This brought forth a good competition, no fewer than nine exhibits being staged. Much the best display was shown by Miss WILLMOTT, Warley Place, Brentwood, Essex (gr. Mr. J. Preece), who had a magnificent stand of flowers, especially for a December exhibition. The varieties were *Mme. Oberthur* (a white variety of high merit), *Algernon Davis* (yellowish-bronze, overlaid with reddish markings), *W. H. Whitehouse*, *Mrs. J. Bryant*, *F. S. Vallis*, *General Hutton* (yellow), *G. Gooding* (a coarse-petalled rosy-pink flower), *Mme. Carnot*, *J. H. Silsbury*, *Mrs. J. Bryant*, *Mme. P. Radaelli* (a magnificent specimen), *Mrs. G. Beach*, *Mrs. F. Dalton*, *Mme. G. Rivol*, and *Mrs. F. W. Vallis*. 2nd, *Hon. Sidney Holland*, *Kneesworth Hall*, *Royston, Herts.* (gr. Mr. H. Humphreys). The blooms shown by this exhibitor were smaller than those in the 1st prize group, but they were remarkably fresh and bright in appearance. *Mrs. F. W. Vallis*, *Mme. P. Radaelli*, *E. J. Brooks*, *Mrs. Barkley*, and *Marquis Venosta* were his best flowers.

Twelve Japanese blooms, distinct.—In this smaller class there were seven exhibits, and it was easy to determine the winning flowers, for they were much superior to any of the others. These also were from the gardens of Miss WILLMOTT, and they included the varieties *W. H. Whitehouse* (a very choice flower), *F. S. Vallis*, *Valerie Greenham*, *Algernon Davis*, *Mme. Oberthur*, *J. H. Silsbury*, *Mme. Carnot*, *Mrs. J. Bryant*, *Mme. G. Rivol* (exceptionally fine), *Mrs. C. Beckett*, *Mrs. T. Dalton*, and *Beauty of Leigh* (a rich shade of yellow). 2nd, *T. L. Boyd, Esq.*, *North Frith, Tonbridge* (gr. Mr. A. C. Horton). This exhibitor showed *F. S. Vallis*, *Mrs. T. Dalton*, *J. H. Silsbury*, *Marquis Venosta*, *Valerie Greenham*, &c. 3rd, *A. Tate, Esq.*, *Downside, Leatherhead* (gr. Mr. W. Mease).

Incurred varieties.—There were nine displays in this class, and although there was a considerable difference in the quality of the exhibits, collectively they were very good, and made a fine display. The 1st prize again fell to Miss WILLMOTT, whose flowers were large, well formed, and evenly matched, a little lacking, perhaps, in bright colours, but equal to any seen at this late season. The varieties were *Duchess of Fife*, *W. Higgs*, *Mdlle L. Faure*, *Frank Hammond*, *Duchess of Fife*, *Marjorie Cordwell*, *Mrs. F. Judson*, *Ialene*, and *Triomphe de Montbrun*, the last-named flower being especially fine. The 2nd prize exhibit, shown by *PANTIA RALLI, Esq.*, *Ashted Park, Epsom* (gr. Mr. G. J. Hunt), was not much inferior to the premier stand. It contained good specimens of *Embleme Poitevine*, *W. Wainwright*, *The Egyptian*, *Frank Hammond*, &c.

CHRYSANTHEMUMS SHOWN IN VASES.

Only one exhibit was seen in the class for nine vases of large Japanese varieties. Three blooms were required for each vase, and the varieties were not to be fewer than six in number. The exhibitor was *PANTIA RALLI, Esq.* (gr. Mr. G. J. Hunt), and he received the 1st prize. He showed *Godfrey's Pride*, *Mrs. Swinburne*, *Mme. G. Rivol*, *Mme. G. Deberie*, *Valerie Greenham*, *Miss M. Hankey* (three fine flowers), *Bessie Godfrey*, *Mme. R. Cadbury*, &c.

A class was provided for a collection of decorative varieties of any section, shown in vases and occupying an area of 12 feet by 3 feet. Large exhibition blooms were excluded. There were two exhibits in this class, the best being staged by *J. L. Burgess, Esq.*, *Maisey Hampton, near Fairford* (gr. Mr. J. A. Humphreys), who

showed fresh, well-coloured flowers of Anemone, Pompon, and decorative varieties, including Crimson Source d'Or, Lizzie Holmes (pompon), Pearle des Beauté, Money Maker, Rubra Perfecta, John Boxall, Mrs. Astill, Quinola, &c. 2nd, J. COURTNEY, Esq., J.P., The Whim, Weybridge (gr. Mr. W. C. Pagram), whose exhibit included many thread-petalled and single varieties.

Single Chrysanthemums.—The only class in this type of Chrysanthemum was one for 12 vases of distinct varieties, arranged with their own foliage. Each exhibit was arranged on a separate table, there being five tables in all. The 1st prize was awarded to E. MOCATTA, Esq., Addlestone (gr. Mr. J. Stevenson). The varieties shown by this exhibitor were very freely flowered, but they were not so bold and erect as some of the older sorts. Notable examples were Belle of Weybridge (very handsome shade of red), Edith Pagram (large flowers of rosy-pink colouring), Grace, Crown Jewell (yellow), Anna Farina (reddish), White Victoria (a neat flower), and Mrs. F. J. McLeod (large flowers, coloured yellow). 2nd, F. A. BEVAN, Esq., Trent Park, New Barnet (gr. Mr. H. Parr). This exhibitor showed Miss Will Jordan (a pleasing flower, with vinous red-coloured florets and a prominent yellow centre), Ryecroft Belle (pink), Belle of Weybridge, Progress (bronze), &c. 3rd, JEREMIAH LYON, Esq., Riddings Court, Caterham (gr. Mr. G. Halsey).

Six vases of Japanese blooms, distinct.—This class was contested by two exhibitors, W. G. PRUDDEN CLARK, Esq., 4, York Road, Hitchin, and W. BEECH, Esq., Romford (gr. Mr. M. Rayment), who were awarded the 1st and 2nd prizes in the order of their names. Mr. CLARK showed W. Duckham, Mme. R. Oberthur, Mrs. T. Dalton, Valerie Greenham, Mrs. E. Thirkell, &c. In the 2nd prize collection was a fine vase of the variety Bessie Godfrey.

Six vases of spidery, thread-petalled, or plumed Chrysanthemums.—This class was also represented by two exhibits. The 1st prize was awarded to Sir C. SWINFEN EADY, Weybridge (gr. Mr. J. Lock). Prominent varieties were Gold Thread, Mrs. Carter, Sam Caswell, Mrs. Filkins, &c. 2nd, J. L. BURGESS, Esq. (gr. Mr. J. A. Humphries). Princess Henry (a large pink-coloured variety) and Cannell's Favourite were well shown by this exhibitor.

Pompon Chrysanthemums.—The schedule required six vases of small-flowered varieties, such as Marion, Miss Gertie Waterer, Snowdrop, &c. The flowers staged were not larger than a sixpence. There were three contestants. The 1st prize was awarded to J. COURTNEY, Esq., Weybridge (gr. Mr. W. C. Pagram), for Primrose League, Snowdrop, Perfection, Lilac Gem, &c. 2nd, Sir C. SWINFEN EADY (gr. Mr. J. Lock), for similar varieties.

AMATEURS' CLASSES.

The flowers shown in these classes were inferior to those in the open section. The principal class was that for 12 Japanese blooms, in not fewer than six varieties, and displayed on boards. There were four exhibits, none of a high quality, the best being displayed by C. B. GABRIEL, Esq., Horsell, Surrey. His varieties included F. S. Vallis, Mme. R. Oberthur, Mrs. T. Dalton, Mrs. F. S. Vallis, and Bessie Godfrey.

In the smaller class for six Japanese blooms, distinct, there was a keen competition, no fewer than ten exhibits being staged. The best was shown by T. GLASS, Esq., Borrowdale, West Hill, Sydenham (gr. Mr. H. Baker). The varieties were General Hutton, Florence Molyneux, Mrs. F. W. Vallis, F. Penfold, Elsie Fulton, and Mme. P. Radaelli. 2nd, W. H. STONE, Esq., Laurie Park, Sydenham (gr. Mr. T. W. Stevens).

In the class for six Japanese blooms, in not fewer than four varieties, W. G. PRUDDEN CLARK, Esq., 4, York Road, Hitchin, won the 1st prize with large, lax blooms of Algernon Davis, J. H. Silsbury, Valerie Greenham, Mrs. E. Thirkell, Leigh Park Wonder, &c. 2nd, Mr. W. GOODING, Four Elms, Edenbridge.

The whole of one large table was filled with single vases of Chrysanthemums decorated with ornamental foliage. They were displayed on a low table, which enabled them to be seen to advantage.

The most successful exhibitor in the decorative classes was Miss C. B. COLE, Feltham.

Plants.—Lady TATE, Park Hill, Streatham Common (gr. Mr. W. Howe), was the only exhibitor in the class for a group of Chrysanthemums arranged with miscellaneous flowering and foliage plants. The exhibit was arranged in a semi-circular manner, well-grown Chrysanthemums being interspersed with Poinsettias, Astilbe (Spiræas), Begonias, Lilies, Palms, Ferns, &c. The group was awarded the 1st prize. Lady TATE was again the only contestant in a class for a group of flowering, berried, and ornamental-leaved plants, from which Chrysanthemums were excluded. This exhibit was very prettily arranged, and received the 1st prize.

CERTIFICATED FLOWERS.

Doreen, single.—A flower of medium size and of a bright shade of yellow. Shown by Mr. F. CORDELL, Reigate.

Blanche, single.—A white variety, of commendable form. Some of the florets showed a faint blush tint. The largest flower measured 4 inches across. Shown by Mr. W. C. PAGRAM, Weybridge.

NON-COMPETITIVE EXHIBITS.

A handsome exhibit of Chrysanthemums was shown by Mr. H. J. JONES, Ryecroft Nursery, Lewisham. At the back of the group were tall Palms, and beneath these were large vases and epergnes filled with exhibition blooms of Mme. Oberthur, R. C. Pulling, John L. Burgess, &c.; while the foreground had smaller vases, with choice foliage plants of Dracænas, Codiaëums (Crotons), Ferns, &c., interspersed. (Gold Medal). A similar award was made to Messrs. H. CANNELL & SONS, Swanley, Kent, for a collection of Chrysanthemums, Begonias, and Pelargoniums. THE GOVERNMENT OF NOVA SCOTIA staged a collection of Apples, to which a Gold Medal was awarded.

Silver Medals were awarded to Messrs. W. WELLS & CO., LTD., Merstham, Surrey, for an exhibit of Chrysanthemums; J. PEED & SON, West Norwood, for Begonias; J. LAING & SON, Forest Hill, S.E., for Codiaëums (Crotons), Palms, and other ornamental-leaved plants; and W. DANE, The Nurseries, Tunbridge Wells, for a display of shrubs.

SALTAIRE, SHIPLEY, AND DISTRICT ROSE.

NOVEMBER 21.—This society's annual general meeting was held on the above date, there being a good attendance of the members. The society was formed in 1903, and it has achieved great success. Last year it extended to the National Rose Society an invitation to hold their provincial show at Saltaire in July last, the result being most satisfactory. The number of exhibitors totalled 108, of which 73 competed in the N.R. Society's classes alone. The number of persons who paid for admission to the show was 8,455, and in addition 3,600 subscribers' tickets were given up at the entrance. This number does not include the National Rose Society's ticket-holders. The receipts for the year were £503 7s. 7d., and the expenditure £449 3s. 11d., thus leaving a profit on the year's working of £54 3s. 8d.

BRITISH GARDENERS' ASSOCIATION.

NOVEMBER 26.—At the last meeting of the Executive Council, held at the Royal Horticultural Hall on the above date, Mr. Chas. Foster presided. Eighteen new members (from two meetings) were elected. Mr. Hawes reported on the Leeds meeting, and remarked that a non-member objected to the association obtaining situations for its members, as he considered it unfair to those who were not members! Preliminary arrangements for 1908 were considered, and it was decided that the annual general meeting should be held on Wednesday, May 27, at 7 p.m. in the Essex Hall. Further designs for a certificate were submitted, and the matter will be placed in the hands of a professional designer. J. W.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending November 30, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The weather, until very nearly the close of the week, was extremely unsettled, with heavy falls of rain in nearly all parts of the country, and with snow in all the more northern districts. Between Tuesday and Thursday thunderstorms or thunder or lightning alone were observed in many parts of England, Wales, and the south of Ireland, the phenomena being very general over our southern and eastern counties on Wednesday. After Thursday a decided improvement in the weather was experienced.

The temperature was below the average in all districts excepting England E. and S. and the English Channel. In the northern and north-western parts of the Kingdom the deficit amounted to at least 3°, and in Scotland W. to as many as 5°. The highest readings were recorded, as a rule, between Tuesday and Thursday, when the thermometer rose to 55°, and upwards in most of the English districts. In the east of Scotland and the north of Ireland it did not exceed 50°, and in the north and west of Scotland it did not reach that level. The lowest readings occurred at various times, but chiefly on the night either of Sunday, Monday, or Friday. In the shelter of the screen the lowest values reported were 15° in Scotland E. (at Balmoral), 20° in Scotland W. (at Cally), and 21° in Ireland N. (at Markree Castle). On the surface of the grass readings below 20° were registered in many places, the lowest being 10° at Balmoral, 14° at Crathes and Markree Castle, and 16° at Llangamnach Wells.

The temperature of the sea showed a further decrease, especially on the Irish coasts where the mean values were from 2½° to 3° lower than in the preceding week. The actual values ranged from 52·7° at Plymouth and 50° and upwards at several stations in the west and south to 45° or rather below it on many parts of the Scottish coasts.

The rainfall was largely in excess over the country generally, the amount in the eastern, central and southern parts of England and in the Channel districts being more than twice as much as the average. In Scotland W. the conditions in this respect were normal, while in Scotland N. there was a large deficit. Amounts exceeding an inch were recorded on Tuesday at many places in the south-east of England and also in some parts of Scotland.

The bright sunshine was in excess of the average in all districts excepting Scotland N., where there was a slight deficiency. The percentage of the possible duration ranged from 99 in England N.E. and 90 and upwards in most of the other English districts and in Ireland to 21 in Scotland E. and 13 in Scotland N.

THE WEATHER IN WEST HERTS.

Week ending December 4.

A week of variable temperature.—The temperature has been again very variable. For instance, on the warmest day the highest reading in the thermometer screen was 52°, whereas on the coldest night the exposed thermometer showed 13° of frost, making this the coldest night since March. The ground is now at about a seasonable temperature, both at 1 and 2 feet deep. Rain fell on four days, but to the total depth of only about half an inch. During the week three gallons of rain-water came through the bare soil percolation gauge, but only two gallons through that on which short grass is growing. The sun shone on an average for 1 hour 35 minutes a day, or for eight minutes a day longer than is usual at this season. Calms and light airs principally prevailed, and on the windiest day the mean velocity for any hour amounted to less than 15 miles—direction S.E.E. The average amount of moisture in the air at 3 o'clock in the afternoon exceeded a seasonable quantity for that hour by 2 per cent.

NOVEMBER.

An exceptionally calm November.—Taken as a whole this was, if anything, rather a warm month. The most noteworthy feature, however, was the long continuance of moderately warm days. On the warmest day the temperature in the thermometer screen rose to 61°, which is an unusually high reading for the month, and on the coldest night the exposed thermometer registered 13° of frost, which is no way exceptional for the time of year. Rain fell on 17 days, to the aggregate depth of 2½ inches, which is slightly below the mean rainfall for November. The sun shone on an average for 1 hour 51 minutes a day, or for about seven minutes a day longer than is usual. The winds remained exceptionally light; in fact, in my records for the last 21 years, I can find no November as calm. The mean velocity for the windiest hour amounted to 20 miles—a remarkably low extreme velocity for the month. The average amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by 2 per cent.

THE AUTUMN.

Moderately warm and dry, and unusually sunny. Each month of the season was moderately warm. As regards rainfall, taking the three months together, this was rather a dry autumn, September being exceptionally dry, and November rather dry, whereas in October the fall of rain was unusually heavy. The sun shone on an average for 3½ hours a day, or for 20 minutes a day longer than is usual. September proved very bright, and November rather bright, while October was rather a gloomy month.

OUR UNDERGROUND WATER SUPPLY.

Since the winter half of the drainage year began in October the rainfall of the first two months of it has exceeded the average by 1½ inch, which is equivalent to an excess of 31,220 gallons on each acre in this district. F. M., Berkhamsted, December 1, 1907.

MARKETS.

COVENT GARDEN, December 4.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Ed.]

Cut Flowers, &c.: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Anemones, dz. bchs. 2 0-3 0	Lily of the Valley, p. dz. bunches 6 0-8 0
Azalea, white, per dozen bunches 3 0-5 0	— extra quality 10 0-12 0
Bouvardia, dz. bchs. 6 0-8 0	Marguerites, white, p. dz. bunches 2 0-3 0
Calla aethiopica, p. dozen 3 0-5 0	— yellow, per dz. bunches 2 0-3 0
— Guernsey 2 0-3 0	Mignonette, per dz. bunches 2 0-3 0
Camellias, per dz. 1 6-2 6	Narcissus, paper white, per doz. bunches 1 6-2 0
Carnations, per dozen blooms, best American various 3 0-4 0	— Soleil d'Or, per dozen bunches 2 0-2 6
— second size 1 6-2 0	Odonatoglossum crispum, per dozen blooms 2 6-3 0
— smaller, per doz. bunches 9 0-12 0	Paneratium, per dozen fls. 4 0-6 0
Cattleyas, dz. blms. 8 0-10 0	Pelargoniums, show, per doz. bunches 4 0-6 0
Chrysanthemums, best specimen blooms, per dz. 4 0-6 0	— Zonal, double scarlet 4 0-6 0
— selected blms., per dozen 2 0-3 0	Poinsettias, per dz. Ranunculus, p. dz. bunches 2 0-4 0
— medium, doz. bunches 12 0-18 0	Roses, 12 blooms, Niphetos 1 0-3 0
Cyclamen, per doz. bunches 4 0-6 0	— Bridesmaid 2 0-3 0
Cypripediums, per dozen blooms 2 0-2 6	— C. Testout 2 0-3 0
Daffodils, p. bunch 1 0-1 3	— Kaiserin A. Victoria, dozen blooms 1 6-3 0
Eucharis, grandiflora, per doz. blooms 2 0-3 0	— Mrs. J. Laing 1 0-3 0
Gardenias, per doz. blooms 2 0-4 0	— C. Mermet 2 0-3 0
Gladioli, various hybrids, per dz. spikes 1 0-2 0	— Liberty 2 0-6 0
— Brenchleyensis 1 6-2 0	— Mad Chatterbox Safrano (French), per dz. bunches 9 0-12 0
Heather, doz. bchs. 2 0-4 0	Spiraea, doz. bchs. 5 0-8 0
Hyacinths, Roman, per dz. bunches 6 0-9 0	Statice, p. dz. bchs. 2 6-3 0
— per dz. bunches of 12 blooms 6 0-9 0	Stephanotis, per dozen tines 4 0-6 0
Lilac (French), per bunch 3 0-4 0	Tuberose, per dz. blooms 0 4-0 6
Lilium auratum 2 0-3 0	Violets, p. dz. bchs. 1 6-2 0
— lancifolium, rubrum and album 2 0-2 6	— special purity 2 0-3 0
— longifolium 2 6-4 0	— Lammes, p. bch. 2 0-4 0
— tigrinum 1 6-2 0	

Cut Foliage, &c.: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Adiantum cuneatum, dz. bchs. 4 0-6 0	Iris foetida, flms. p. dz. bunches 5 0-6 0
Asparagus plumosus, long trails, per doz. 8 0-12 0	Ivy-leaves, bronze — long trails per bundle 1 6-3 0
— medium, bunch 1 0-2 0	— short green, doz. bunches 1 6-2 6
— Sprenger 0 6-1 0	Moss, per gross 4 0-5 0
Berberis, dz. bchs. 2 0-2 6	Myrtle (English), small leaved, doz. bunches 4 0-6 0
Croton leaves, per bunch 1 0-1 3	— French, dozen bunches 1 0-1 6
Cycas leaves, each 1 6-2 0	Oak (Quercus coccinea), dz. bchs. 8 0-12 0
Fern, English, per dozen bunches 1 0-2 0	Pernettya, p. bunch 0 6-0 9
— French, dz. bchs. 1 0-3 0	Physalis Franchetii, per dz. bunches 4 0-6 0
Galax leaves, per doz. bunches 2 0-2 6	Smilax, per dozen trails 2 0-3 0
Hardy foliage (various), per dozen bunches 3 0-9 0	

Plants in Pots, &c.: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Ampelopsis Veitchii, per dozen 6 0-8 0	Erica gracilis, doz. 10 0-12 0
Aralia Sieboldii, dz. 4 0-6 0	— nivalis, per dz. 12 0-15 0
— larger 9 0-12 0	— hyemalis 10 0-15 0
— Moseri, per dz. 6 0-12 0	Euonymus, per dz. 4 0-9 0
Araucaria excelsa, per dozen 12 0-30 0	Ferns, in thumbs, per 100 7 0-10 0
Aspidistras, green, per dozen 18 0-30 0	— in small and large 60's 12 0-20 0
— variegated, per dozen 30 0-42 0	— in 32's, per dz. 4 0-10 0
Asparagus plumosus, per dozen 9 0-12 0	Ficus elastica, dz. 9 0-12 0
— Sprenger, dz. 8 0-10 0	— repens, per dz. 4 0-6 0
— tenuissimus, per dozen 9 0-12 0	Hyacinths (Roman), per dozen pots 12 0-15 0
Azalea indica 24 0-36 0	Kentia Belmoreana, per dozen 18 0-30 0
Begonia Gloire de Lorraine, p. dz. 8 0-15 0	— Fosteriana, per dozen 18 0-30 0
Bouvardias, per dz. 6 0-8 0	Latania borbonica, per dozen 12 0-18 0
Callas, per dozen 10 0-12 0	Lilium longiflorum, per dz. 15 0-24 0
Chrysanthemums, per dozen 5 0-9 0	— lancifolium, per dozen 12 0-18 0
— best double 12 0-18 0	Lily of the Valley, per dozen 18 0-30 0
Clematis, per doz. 8 0-9 0	Marguerites, white, per dozen 6 0-8 0
Cocos Weddelliana, per dozen 18 0-30 0	Poinsettias, per dz. 9 0-12 0
Crotons, per dozen 18 0-30 0	Selaginella, per dz. 4 0-6 0
Cyclamen, per doz. 9 0-12 0	Solanums, per doz. 5 0-9 0
Cyperus alternifolius, dozen 4 0-5 0	Spiraea japonica, dz. 8 0-12 0
Lacus, per dz. 4 0-5 0	Veronicas, per dz. 4 0-6 0
Phacelia, per doz. 9 0-24 0	

Fruit: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Apples (English), per bushel: 4 6-6 0	Grapes, English Muscats, p. lb. 2 0-4 0
— Wellington 4 6-6 0	— Canon Hall, per lb. 2 0-4 0
— Northern Greening 3 6-4 6	— Belgian Colmar, per lb. 0 8-1 0
— Newton Wonder 5 0-6 6	— Almeria, per barrel 10 0-20 0
Bramley's Seedling 5 0-7 0	Lemons: 14 0-15 0
— Lord Derby 5 0-6 0	— Messina, case 12 0-20 0
— Peasgood's Nonsuch 5 0-7 0	— Naples, p. case 17 0-24 0
— King Pippins 4 6-6 0	— Lychees, per box 1 0-1 6
— Blenheim Pippin 4 6-6 0	Mandarines, p. box 1 0-1 6
— Cox's Orange Pippin, 1/2 sieve 7 0-14 0	Mangoes, per doz. 4 0-8 0
Nova Scotia, per barrel: 14 0-15 0	Medlars (English), 1/2 sieve 3 6-
— Ribstons 14 0-15 0	Nuts, Cobs (English), per lb. 0 3 1/2
— Gloria Mundi 15 0-16 0	— Grenoble-Walnuts, per bag 5 6-6 3
— Blenheims 16 0-17 6	— Almonds, bag 42 6-
— King's 15 0-16 0	— Brazil, new, per cwt. 70 0
— New York Imperialists 20 0-21 0	— Barcelona, per bag 32 6-
— Canadian, per barrel: 17 0-18 0	— Cocoa nuts, 100 12 0-17 0
— King of the Pippins 17 0-18 0	Chestnuts: 12 0 15 0
— Baldwins 15 0 17 0	— Italian, per bag 8 0 10 0
— Greenings 16 0 18 0	— Red, per bag 8 0 10 0
— Ribstons 16 0-18 0	Oranges (Jamaican), per case 5 6-9 6
— Blenheims 19 0-21 0	— Almeria, case 10 6 12 0
— Californian 9 0-12 0	— Valencia, case 7 0 12 0
— Newtowns, per box 12 0 14 0	— Denia, p. case 13 0-20 0
— "Oregon" Newtowns, per box 12 0 14 0	Pears (English), Catillac, per bushel 4 6 6 0
Avocado Pears, per dozen 4 0-8 0	— Doyenné du Comice, per dozen 1 6-4 0
Bananas, bunch: 6 0-6 6	— Pitmaison Duchesse, per dozen 1 6-2 6
— No. 2 Canary 7 0 7 6	— French, Doyenné du Comice, per crate 10 0 12 0
— No. 1 7 0 7 6	— Beurre Magnifique, per box 10 0
— Extra 8 0-8 6	— Catillac, Dutch, per basket 2 6-
— Giants 9 6-10 0	— per barrel 10 0
— Jamaica 5 0-5 6	— Glou Morceau (French), per box 10 0 10 6
— Loose, per dz. 0 9 1 3	— Winter Nelis, per box 18 0 20 0
Cranberries, p. case 6 6-7 6	Pineapples, each 2 6 5 0
"Custard" Apple (Anona) per doz. 6 0-12 0	
Dates (Tunis), doz. boxes 4 6-4 9	
Grape Fruit, case 9 0-12 0	
Grapes (English), Alicante, per lb. 0 6-1 0	
Gros Colmar, per lb. 0 8-1 6	

Vegetables: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Artichokes (French), per dozen 2 6-	Leeks, 12 bundles 1 6
Asparagus, Paris Green, bunch 3 6-4 0	Lettuce (French), per dozen 1 0-1 2
— Spruce, bunch 0 5-0 6	Mint, doz. bunches 0 9-1 0
Beans, French, per packet 0 3-0 4	Muscardinus, per lb. 0 8-0 10
— Guernsey, p. lb. 0 6-0 7	— buttons, per lb. 0 10-1 0
— Madras, per basket 3 0-3 6	— "Brook" p. lb. 0 7-0 8
Beetroot, bushel 1 3-1 6	Mustard and Cress, per dozen pun. 1 0-1 6
Brussels Sprouts, 1/2 sieve 1 0-1 6	Onions (Spanish), per case 5 0-5 6
Cabbages, per doz. 0 6 0 9	— Dutch, per bag 4 0-
— Greens, bag 1 0-	— picking, per bushel 2 0-2 6
— red, per dozen 2 0-	Parsley, 12 bunches 1 6-1 9
— Savoys, per tally 3 0-	— 1/2 bushel 1 0-1 6
Carrots (English), washed, p. bag 2 6-	Salsafy, per dozen bundles 3 6-
Cauliflowers, p. dz. 1 6-2 0	Spinach, English, per bushel 0 9-1 0
— per tally 7 0-10 0	Tomatoes, selected, per dozen lbs. 2 9-4 0
Celeriac (French), per dozen 1 9-2 0	— small selected, per dozen lbs. 2 6-3 6
Celery, washed, per dozen 0 8-0 10	— Teneriffe, per bundle of four boxes 10 0-12 0
Chicory, per lb. 0 3-0 3 1/2	Turnips (English), doz. bunches 2 0-3 0
Chow Chow (Sesuvium edule), p. dozen 3 0-	— per bag 2 6-
Cucumbers, per dz. 2 0-3 6	Watercress, per doz. bunches 0 4-0 6
Endive, per dozen 1 6-2 0	
Horseradish, foreign, per doz. bundles 10 0 12 0	

REMARKS.—Prices of Apples this week are much lower, especially of those arriving from Nova Scotia and Canada; and at present there does not appear to be any prospect of an improvement, unless the supplies decrease. Oranges also are very plentiful and cheap. The demand for home-grown Tomatoes and Grapes continues to be slow. Kentish Cob Nuts are easier in price, but the quality generally of this Nut is inferior to last season. P. L., Covent Garden, Wednesday, December 4, 1907.

POTATOES.

Kents, 8s. 6d. to 5s. per cwt.; Lincolns, 70s. to 90s.; Blacklands, 70s. to 85s.; Maincrops, 90s. to 100s. per ton; Dutch Magnums, 3s. to 3s. 6d. per bag; Dutch Imperators, 2s. 6d. to 8s. per bag; Dunbar Dates, 5s. to 6s. per bag. Owing to the mild, changeable weather, trade is dull. J. D. C., Covent Garden, December 4, 1907.

COVENT GARDEN FLOWER MARKET.

During the past week trade for pot plants has been very dull, while supplies have been unusually plentiful for the time of the year. In company with Lily of the Valley, Spiraea, Azaleas, Daffodils, &c., are Chrysanthemums, together reminding one of December and spring. Lily of the Valley is just now very good, and a few years ago these plants would have been worth a guinea a pot at

Christmas. They may now be bought at from 1s. 6d. to 2s. 6d. per pot. Lilium longiflorum is another example of decreased value. This plant may increase a little in value for the Christmas trade, but at present good plants may be bought at quite nominal prices. Callas in former years were very valuable at Christmas, but now, to 12s. per dozen is now the highest prices realised for best plants. Marguerites may be had equal in quality to those seen in the spring, but they are not worth more than 6s., or at the most 8s., per dozen, although some few years ago they realised from 18s. to 30s. per dozen. Chrysanthemums are still the leading feature in pot-plants; Jardin des Plantes, which has been grown for at least 40 years, is still one of the best varieties for marketing in pots, and beautiful specimens are seen. Of all the improved "single" varieties Ladysmith is the only sort marketed as pot-plants. There is a demand for a good yellow "single" in pots. Ericas are in the best possible condition from all growers, but, unfortunately, up to the present trade for them has not been good. Begonia Gloire de Lorraine is now seen on several stands, and sells fairly well. Just now there is no other pink flower to equal it, and "pink" remains a favourite colour. If a Chrysanthemum of the same shade of colour could be raised there is a fortune awaiting the person introducing it. Cyclamen are now plentiful, but it cannot be said that they are quite so good as we have seen in former years. And the same must be said of Primulas. The old growers who took such a pride in these plants seem to have all died out. A leading florist told me that he would be glad to find such as we used to see twenty years ago.

CUT FLOWERS.

During the past week there has been no very great change, but supplies of some things are uncertain. It is difficult to quote absolute prices for some flowers. I find, for instance, that best Gardenias have gone up to 4s. per dozen, but some mornings the same quality may be purchased for 2s. per dozen. Eucharis, Stephanotis, and Paneratiums are also very variable in prices. Orange Blossom was well supplied last week: when this is really wanted big prices can be obtained for it, but stocks are often wasted. It is much the same with other choice flowers at this season of the year. Some special function may cause a demand. Some mornings Orchids sell well, but more often they are not wanted. Roses and Carnations have a more regular demand. Up to the present time supplies have been good, and prices have advanced a little. Chrysanthemums are now so good that they spoil the trade for all other flowers. Coloured varieties which were not wanted a few weeks ago are now scarcer than "whites." Last Saturday I bought good white Chrysanthemums at 1s. 6d. per dozen blooms: three weeks ago they would have realised 2s. 6d. or 3s. per dozen. Lilliums are very uncertain in price. Last Saturday they were making 1s. per bunch, but on Tuesday they were down to 3s. for the same quality. A. H., Covent Garden, Wednesday, December 4, 1907.

DEBATING SOCIETIES.

SALISBURY AND DISTRICT GARDENERS'.

At a meeting of this society held on the 27th ult. a paper, on "Manures," was read by Mr. Wyatt. A capital discussion followed the reading of the paper, especially on manures suitable for various subjects. Mr. Bryant presided over a large attendance of members.

CARDIFF GARDENERS'.

A meeting of this association was held on November 26, Mr. H. R. Farmer presiding. Before commencing the meeting, the chairman referred to the loss the society had sustained through the sudden death of Mr. H. Gillett. The lecturer for the evening was Mr. J. Julian, his subject being "Rhododendrons, their Aspect and Cultivation." Mr. Julian's remarks on the propagation of these plants was the subject of much discussion by the members. R. T. W.

BRISTOL AND DISTRICT GARDENERS'.

"Forestry" was the subject discussed at the meeting held on Thursday, November 28. Mr. Went, Forester to the Marquis of Bute on his South Wales estates, opened the debate with a paper. Mr. Went said that "Oak and Larch trees should be extensively planted. The Japanese variety of Larch far excelled the older form for forest purposes as it made rapid growth. About 4,000 Larch trees could be planted on an acre of land, and the smallest trees should be planted on the highest elevation." Two new members were elected. H. W.

CHELMSFORD & DISTRICT GARDENERS'.

A meeting of this association was held on November 29, when Mr. R. E. Williams read a paper on "Seakale and its Cultivation." The lecturer expressed surprise that Seakale—a delicacy perhaps second only to Asparagus, a plant as easily raised as Rhubarb, and one that grows wild on the south coast of England—should be so seldom grown in private gardens.

WARGRAVE AND DISTRICT GARDENERS'.

The members of this association met on November 20 to witness competitions in decorating vases. The first event was for journeymen gardeners only, and five vases had to be arranged as a table decoration. Mr. G. Akerman was awarded the 1st prize. Another class was for head gardeners, single-handed gardeners, and foremen, who had to arrange a large vase for effect in a quarter of an hour. Mr. F. Newman showed the best arrangement in this competition. 2nd, Mr. J. Botley. The flowers were afterwards forwarded to the Royal Berks Hospital. Four new members were elected. H. C.

CATALOGUES RECEIVED.

JOHN MCKERCHAR, 85, Giesbach Road, Upper Holloway, London—Ferns, Palms, Plants, Fruit Trees, Roses, &c. J. SPINK, Summit Road Nursery, Walthamstow, London, N.E.—Chrysanthemums, Dahlias, &c.

ANSWERS TO CORRESPONDENTS.

AGAPANTHUS UMBELLATUS: *B. L.* To secure a number of plants for plunging in the open border when in flower in the manner you describe, you should proceed as follows. Shift the small plants into pots of the size you wish them to be cultivated permanently, using good turfy loam and dried cow manure, with some roughly-broken bones added. After they have become established in the pots, the plants should be given a little weak manure water two or three times a week when actively growing and developing their spikes. The plants should never be dried off, but the water supply should be restricted in the winter months, and the manure water discontinued during the same period.

BETROOT: *X. Y. Z.* The sample you send us shows reversion to an older form, a condition commonly seen in this vegetable. Stocks need carefully selecting each year, in order to keep them up to the best standard. The condition is not the result of disease.

BEGONIA ROOTS: *G. H. B.* The trouble is due to the presence of eelworm in the soil. Burn all the affected roots, and sterilise the soil by baking.

BULB CULTURE: *S. H. Farcham.* All the plants you mention may be grown in a greenhouse or cold frame. *Cypella Herbertii* is an Iridaceous plant and requires to be grown in a similar manner to *Ixias*, *Sparaxis*, and other Cape Irids. They should be dried off after the completion of the growth and flowering stage, until the season of growth comes round again, when they should be re-potted and watered. The two *Amaryllids*—*Chlidanthus fragrans* and *Zephyranthes*—should be treated in a similar manner. The strict observance of the need of moisture during the growing season, and of dry conditions during the time the plants are at rest, are the main points to be observed in the culture of all deciduous bulbs, corms, &c. *Blotia hyacinthina* is a cool greenhouse terrestrial Orchid which also succeeds tolerably well in mild districts if planted in a sheltered rockery out of doors. To propagate *Erica hyemalis* place one or two of the old plants in a warm greenhouse until early in spring, when the cuttings may be taken and rooted under bell-glasses in the same house.

CALANTHE FLOWERS COLOURLESS: *Oculata.* The suppression of colour in *Calanthe* flowers is not uncommon. It may arise from comparative failure of the root-action or from noxious gases in the atmosphere in the house they occupy. In your case both causes seem to have contributed to the failure of the colour in the flowers. First the plants received a check by removal from one house to another, and secondly by their being returned to the freshly-painted house. In the compost in which the *Calanthes* are potted a mixture of dried cow-dung with the loam in place of the sphagnum-moss would have been better. Weak manure-water made from cow-dung with a little soot added should be given to *Calanthes* during the time they are making their growth, and at the period when they are developing their flower-spikes.

CARNATIONS: *Mrs. A. E. M.* The insects you sent are the grubs of a fly, and from your letter we gather that you find them on and in the soil and not in the stems of the plants. Were they in the stems we should say that they are the grubs of the "Carnation fly" (*Hylemia nigrescens*), as they resemble them very closely. The grubs of nearly allied flies, however, are so much alike that it is almost impossible to say positively to what species they belong. As to whether the plants will recover after the grubs have been removed will depend on the amount of injury that each plant has received. You might try a watering with a strong solution of nitrate of soda, or dibbling three or four holes in the earth near the edge of each pot down to the bottom of the soil and putting a small amount of "vaporite" in each hole, filling in the soil again; the vaporite will gradually diffuse fumes which are very deadly to insect life. The fumes have a tendency to rise, so it should be placed as low down in the pot as possible. Vaporite is a proprietary remedy and may be obtained through most nurserymen.

CHARCOAL FOR LAWNS: *C. E. Gamble.* Charcoal is a decided antiseptic material, and

sweetens soils to which it is added by absorption of pure atmospheric air; hence it is very frequently used for potting purposes, and when making up vine borders, &c. There can be no doubt that finely powdered charcoal applied to a lawn that is liable to become too saturated with water, and where Moss is prevalent in the herbage, would have the effect of improving matters and indirectly would act as a germicide. There is nothing poisonous in the properties of charcoal to kill insects. If it is decided to try its effects on a lawn, about 6 ozs. per square yard of surface might be applied any time from December to February. It could do no harm, and in certain cases a good effect might be produced.

CLIMBERS FOR A SOUTH-WEST WALL: *A. C.* The following plants will be suitable for your purpose:—*Clematis Jackmanii* and others, *Lathyrus grandiflorus*, *Polygonum baldschuanicum*, *Roses* of the *Wichuraiana* and *rambler* class, *Periploca græca*, and *Akebia quinata*.

CŒLOGYNE CORRUGATA: *W. B.* This species grows best in a cool house. After the pseudobulbs are mature the plants should be placed on a shelf in a well-ventilated situation, and the water supply considerably restricted. If watered equally during all the year the plants grow well, but usually fail to bloom.

DENDROBIUM NOBILE BUDS FAILING: *Anxious.* As the plants have now the buds well advanced, you must afford water to the roots, otherwise the blooms will fail as you say they have done on previous occasions. To make sure that the blooms shall develop well, elevate the plants well up to the glass of the roof or place them on a shelf near the glass. Plants of these *Dendrobiums* grown in suspended baskets seldom lose their buds in the manner you describe. We presume that your plants are growing in pots placed on the stage. It sometimes happens that excessive heat from the hot-water pipes, especially at night, causes the buds to fail. Fumes from the stove-hold entering along the course of the hot-water pipes have also been known to cause similar damage.

ERANTHEMUM: *Correspondent.* The leaves of your *Eranthemum* are infested with the fungus known as *Sphaeronema deformans*. It will probably not materially injure the plants, as it only affects the leaves and, generally at least, does not seem to damage them seriously.

FIR TREES: *J. H. B.* Your specimens have now been thoroughly examined. The soil is permeated with white fungus mycelium. The branches show spruce galls caused by *Chermes laricis*. The roots are attacked by a rot, in which no fungus or bacterium enters, but is evidently due to cultural difficulties. Nothing can be done to arrest the disease unless the trees are sufficiently small to be transplanted. In this case the roots should be pruned, and the trees planted in deeper soil. Thanks for the contribution to the Royal Gardeners' Orphan Fund.

GARDENER'S NOTICE: *F. W. J.* A head gardener is entitled to receive one month's notice before terminating his employment.

GREASE-BANDS: *R. D.* The paper used for bands around the trees will answer the purpose perfectly, but care must be exercised to overlap the ends and paste them together, so that no crevices will be left by which the insects can escape to the branches above. The preparation of fat you used became consolidated owing to salt having been added in the process of cooking, and this, together with the treacle, could easily be consumed by the birds. The best ingredient for the purpose you require is something that is sticky and at the same time not injurious to the bark. Preparations containing any form of tar will in time injure the bark, especially the bark upon young trees. A simple and effectual method is to use good cart grease, containing no form of tar. You may use the fat in conjunction with palm oil and soft soap, or rape seed oil and a little caustic soda; in each case the ingredients should be so mixed together that it can be applied with a painter's brush. This application will require to be repeated at least twice during the period the bands remain on the trees. The bands should always be placed in position

early in October each year. In order to have your fruit trees free from attacks next year, and assuming the grease-bands have not been perfectly satisfactory, you had better spray the trees with the soda and potash wash before the bud show signs of making growth in the spring.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers.*

FRUITS: *W. Herne.* 1, Dredge's Queen Charlotte; 2, Dean's Codlin.—*F. S. Forge Apple.*—*J. T. S.* We cannot identify your Apple. We think it is a local cider kind.—*F. Nisbet.* 1, Small's Admirable; 2, Bramley's Seedling; 3, Lord Grosvenor; 4, Knight's Monarch.—*F. F.* We cannot undertake to name varieties of Grapes unless we receive a whole bunch, properly packed, with foliage and a portion of wood. It is impossible to name Grapes correctly from a few berries only. Moreover, yours were bruised and mildewed when opened, probably the result of improper packing.

PLANTS: *H. T. Euonymus europæus.*—*A. J. C.* 1, *Begonia* hybrid of the "President Carnot" class; 2, *B. subpeltata argentea*; 3, *Pelargonium echinatum.*—*W. A. B.* 1, *Ornithogalum longibracteatum*; 2, *Mesembryanthemum mutabile.*—*S. O. M.* *Agapanthus umbellatus variegatus.*—*H. A. M.* We can detect no difference between your specimen and *Escallonia organensis* other than a comparative absence of red colouring on the stems and petioles.

NEPENTHES: *R. H. A.* The *Nepenthes* is not an Orchid nor a Fern, but a dicotyledonous plant which is generally cultivated for the pitcher-like appendages it produces to its leaves. The "pitchers" are modifications of the upper parts of the leaves, and are totally unconnected with the flowers, these being produced from the stem itself and not from the leaves. Plants of *Nepenthes* are never displayed at public exhibitions when in flower, but rather when the pitchers are in the highest stage of development. It would, therefore, be highly improper to disqualify a group of "Orchids, foliage plants, and Ferns" because it contained *Nepenthes*.

POLLINATING CYPRIPIEDUM: *D. H.* If you make a longitudinal section of an ovary you will see where the male and female organs are situated, and, having found these, the process of pollinating the flower is as simple a process as with any other plant.

SCALE IN POTATOS: *Hampshire.* See article on this subject in the present issue.

TULIP VAN THOL: *A. P.* The bulbs are perfectly healthy, well-developed specimens, and at first it was difficult to account for the absence of roots. On a closer examination with magnifying power it was seen that the root points have been eaten off in the young stage, and a very few new roots are issuing from the sides of the earlier ones. If the whole of the batch is similarly affected, it is the result of insect life in the soil. Notwithstanding this, we should not hesitate to put the bulbs in the greenhouse for forcing. Growth has recently taken place in the more backward bulb, and even now the presence of the flower bud can be detected. Read carefully the instructions given for forcing such plants in our last issue and act accordingly.

COMMUNICATIONS RECEIVED. *Narcissus.*—*G. H.*—*Abinger*—*J. S.*—*J. B.*—*H. A. I.*—*W. A. C.*—*W. G. S.*—*W.*—*Peter R.*—*Anxious*—*F. D.*—*Ajax*—*W. H. W.*—*H. G. Alexander*—*S. A.*—*Constant Reader*—*C. H. Payne*—*Ambitious*—*C. Read*—*E. Steele*—*West, Newman & Co.*—*H. D.*—*F. G. C.*—*H. W. W.*—*Rev. D. R. W.*—*F. M.*—*Fair Play*—*J. M.*—*G. H. R.*—*P.*—*Hugh Low & Co.*—*J. D. G.*—*J. R. J.*—*Hayward, Tyler & Co., Ltd.*—*E. M.*—*Employee (you should have sent your name and address)*—*J. D.*—*P. M.*—*A. H.*—*J. B.*—*J. A.*—*H. R.*—*C. B.*—*T. A. G.*—*W. G.*—*J. S.*—*W. J.*—*A. H. W.*—*A. E. T.*

THE

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THE AURICULA.

A GREATER interest has been taken in the Auricula during the last decade than in any previous period of time. The florists of a hundred or more years ago, however, valued Auriculas highly, and knew their value much better than growers of the present day. When a very choice variety was obtained from seed all the growers were anxious to possess it, and working men would willingly give their guinea for a choice variety. It is related that, after Leigh's Colonel Taylor, the best green-edged variety of its day, was distributed, as much as £5 5s. was paid for a plant. I still grow this variety; it has a very pure green edge, but, owing to its feeble constitution, it makes but poor growth. The constitutions of the plants were formerly ruined by excessive feeding. When I first grew Auriculas, I bought plants from some of the old-fashioned florists, and the compost in the flower pots was usually much overdone with rich manure, "night-soil" being a favourite stimulant. It says much for the constitution of the Auricula that it could grow and flower well for a time with such treatment. Even so recently as the year 1839, in a treatise on the Auricula, the author condemned the rich composts, but suggested the following for "strong-blooming plants": "One barrow of sound loam, one barrow of dried night-soil, one

barrow of the dung of sheep, cows, and poultry; mixed in blood from the slaughter-house in equal quantities." The patient cultivators in those far-off days had faith in their instructors. Maddock was a great cultivator about the end of the eighteenth and beginning of the nineteenth century. Here is a description of the compost he used: "½ rotten cow manure two years old, 1-6 sound earth of an open texture, ½ earth of rotten leaves, 1-12 coarse sea or river sand, 1-24 soft, decayed willow wood, 1-24 peaty or moory earth, 1-24 of the whole ashes of burnt vegetables." These are two only of the numerous recipes published, but they show how impossible it must have been to keep the plants in a healthy condition.

No Auricula-fancier in these days would ever be tempted to use such rich mixtures for their plants in any period of their growth. A good compost for Auriculas would be one consisting of three or four parts good loam to one part of leaf-mould and one part of decayed manure. The Auricula likes fibrous loam, not too much decayed. I never saw Auriculas better grown by an amateur than the plants Mr. Henwood used to exhibit, and he had arrived at the conclusion that good, fibrous loam without any admixture was the best potting material. This is certainly the most natural potting soil, and the roots develop most freely in the open, fibrous loam pressed firmly into the pots. The correct time to carry out the work of repotting has always been a very important matter with the fanciers. Not only at what time of the year, but also how to do it. In my collection of about 15,000 plants repotting is performed in every month of the year. One of the main points is to be careful not to overpot the plants. I do not use any pots having more than a diameter of 5 inches inside measurement, and these for the stronger-growing varieties only. I examine as many as I can of the entire collection in December and January. Some of the plants are merely surface-dressed; many of them are turned out, the roots are examined, and the plants returned into clean flower-pots, taking care not to disturb the roots more than is absolutely necessary.

The flower pots should be well drained, and the drainage secured with perfectly fibrous material placed over the potsherds. For two months in winter many growers used to keep the plants without water, but this is an error to be deprecated. During winter much injury is caused by the plants losing their outer leaves and by these being allowed to remain until decay sets in on the stem of the plants as well as on the leaves. The decayed and decaying leaves should be removed frequently.

Winter treatment may be said to begin after the middle of November, and it continues until the early weeks of February. Before the latter time every plant should be carefully examined in order to ascertain if it requires to be turned out of its flower-pot or to be merely surface-dressed. A very rich compost has been recommended for surface-dressing, but such material is unnecessary and may be absolutely injurious. I received some Auricula plants from the late Mr. Richard Gorton, and the surface-dressing to a good depth was almost entirely composed

of cow-manure, but until May, when I repotted them, no roots had penetrated the stuff. Since that time I have used the same material for surface-dressing as I do for repotting. All through the winter (in mild weather, of course) offsets are removed as the work proceeds, but it is necessary to put them in a house that is heated sufficiently to prevent frost. If they were simply put in unheated hand-lights or frames, many of them would rot.

I have never known Auricula plants to be attacked by fungoid diseases, but a collection is probably never free from the attacks of the woolly aphis (*Trama auriculæ*). This insect forms a lodgment on the roots, and spreads through the collection in a very mysterious way, but the most remarkable thing about it is that it does not apparently injure the plants. Fumigating with the XL-All vaporiser keeps it under, as it kills any exposed insects but does not disturb those that are hidden amongst the roots and drainage. Green-fly, which sucks the juices of the leaves, does much more damage to the plants, but this pest may be destroyed easily by fumigating.

Abundance of air ought to be admitted, whether the plants are in a frame or in an Auricula house. The lights should be put over the plants on frosty nights.

Winter is the best time to purchase plants; they are at rest and will take to their new quarters as soon as growth begins in February.

We used to have audits of the show Auriculas. The first, to my knowledge, was in 1876. In *green-edged* varieties Colonel Taylor headed the list, followed by Freedom, Imperator, Prince of Wales, Anna, Prince of Greens, and Champion. In *grey-edged* varieties, George Lightbody and Lancashire Hero were equal, followed by Sykes' Complete, Alexander Meikeljohn, Alderman C. Brown, George Levick, and Ringleader. In *white-edged*, Smiling Beauty, True Briton, Regular, Glory, Catherina, Bright Venus, and Favourite. In *selfs*, Othello, Pizarro, Blackbird, Garibaldi, Charles J. Perry, Meteor, Flag, and Mrs. Sturrock.

No fewer than ninety varieties were included in the four classes, and these were in the collection of seven growers only, or, at least, seven lists, as Mr. Horner and Mr. Simonite acted conjointly. During the 30 years since the list was made up, most of the above varieties have been displaced, and new ones have taken their places.

The best varieties now in the four classes are: *Green-edged*, Abbe Liszt, Abraham Barker, Dr. Hardy, James Hannaford, Mrs. Henwood, Rev. F. D. Horner, and Shirley Hibberd.

Grey-edged: Amy Robsart, George Rudd, George Lightfoot, Mabel, Marmion, Olympus, and Richard Headly.

White-edged: Acme, Conservative, Frank Simonite, Heather Bell, Mrs. Dodwell, Rachel, and Wild Swan. *Selfs*: Black Bess, Favourite, Gerald, Mikado, Mrs. Phillips, Mrs. Potts, and Miss Barnett. In the *green-edged* none is left. In the *grey-edged*, Lightbody only. In the *white edged*, none; and in *selfs*, none. There are perhaps better varieties in existence than those I have mentioned, but it is useless giving names of any that cannot be purchased. Jas. Douglas.

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM CRISPUM.

THE question as to whether high conditions of cultivation induce a tendency to the production of abnormal characters in flowers is again suggested by some examples which are in bloom in the collection of J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis). The *Odontoglossums* in the fine house built for them are in splendid condition, and those in bloom are producing very finely developed inflorescences; but a proportion of the flowers have an abnormal arrangement of the parts. To take two examples. The first, a very fine spike of 13 flowers, has about half of the blooms with curiously enlarged columns, the column-wings being more or less furnished with petaloid hood-like enlargement. Some of the flowers also displayed one or two additional segments; yet the beauty of the flowers is not marred. On the other spike of 11 large rose-tinted flowers, two were made up of two perfect flowers, each on a combined

of all the sepals, petals, and the lip are white. There is but little yellow at the base of the lip, and the column head is deep crimson. The back of the flower is almost as handsome as the front.

At present the plant is not a large one, and when fully developed it should become one of the very handsomest varieties, if not the finest known, in its section. Mr. Ogilvie is to be heartily congratulated upon blooming such a magnificent form. *de B. Crawshaw.*

MILTONIA VEXILLARIA.

ON several occasions we have given illustrations of remarkably good specimens of *Miltonia vexillaria* grown in the collection of Major G. L. Holford, C.V.O., C.I.E., at Westonbirt (gr. Mr. H. G. Alexander), and we now reproduce (at fig. 168) a photograph of several of the smaller plants showing the floriferous character induced by Mr. Alexander's treatment. None but the best forms are grown, and the colours of the darkest varieties are highly developed.

too, are the exception rather than the rule. Some species not producing them at all. Since some of the best forms also lend themselves but charily to division, rarely producing offsets, it is clear that the last and least known mode of propagation, viz., by induced buds on frond bases or caudices, possesses special interest. I propose in this article to deal with it alone, especially as I have already written on various occasions upon spore-sowing and propagation by division.

It is highly probable that many more species of both native and exotic Ferns would admit of this mode of propagation than have yet been experimented upon, and as the treatment is extremely simple, I would strongly advise the cultivators of rare exotic Ferns, otherwise difficult to propagate, to make trials on the method hereafter described. Beginning with the *Hartstongue*, the best forms of the frilled or *crispum* section of this species, which section is undoubtedly one of the more ornamental, are invariably barren of spores, and although, in course of time, established specimens produce many centres of growth, these are closely asso-



FIG. 168.—*MILTONIA VEXILLARIA* AS CULTIVATED IN MAJOR HOLFORD'S COLLECTION, WESTONBIRT.

pedicel. The result of this arrangement was that the two inner petals in each case were projected forward back to back, as there was no room to spread in the usual way. Other instances of the kind were noticed, and it seems probable that excessive vigour in the plants may find an outlet in these abnormal arrangements of the flowers. *J. O'B.*

ODONTOGLOSSUM CRISPUM "F. M. OGILVIE."

THIS gorgeous variety originally bloomed as an imported plant in the collection of Mr. F. Menteith Ogilvie, The Shrubbery, Oxford, in 1903, and then gave promise of much improvement; accordingly it was painted for reference. It has now bloomed again, and to see it alive, covered by the deep, intense, crimson blood-coloured spots upon its white ground, can alone give anyone the real accuracy needed in such a case. As is usual in these highly-coloured varieties, there is a great deal of rose-suffusion all through the ground colour, but the margins

THE FERNERY.

PROPAGATION OF FERNS.

FERNS can be propagated in four different ways, viz., by means of their spores, by division of the plants, by layering bulbil plants which are produced upon these fronds, and finally, by inducing the formation of similar bulbils on portions of their root-stocks or frond bases, the last cited being little practised, as the procedure is not generally known, and the bulbils only appear after special culture has been practised. By any one of the last three processes we are fairly sure to secure thoroughly true plants, i.e., Ferns of precisely the parental character, the exceptions, though they do occur, being rare. Through the spores, on the contrary, some varieties of Ferns yield very diverse offsprings, while others are almost invariably constant; spores, moreover, are very sparsely produced on many of the more beautiful types, and some are entirely barren. Bulbil plants,

ciated together and require surgical treatment, as it were, for their separation. With this species—and my remarks apply to all the varieties—the root-stock is gradually built up by the persistent bases of the old fronds which remain as fleshy, oblong stumps about $\frac{3}{4}$ inch long, attached to the central caudex by a slender neck. By removing a little soil at the side of an established plant, these can be seen plainly, and since every frond, even those which may not be perfect, leaves one of these behind it when it dies down, an old plant has hundreds of them since they last alive for years. These can be detached by pressing them downwards, or it will suffice to sever them as low down as possible with the point of a sharp knife; if, as is probable, a few root-fibres are found to be attached, these can be detached by cutting. If given a damp, cool position, every one of these, without exception, is capable of producing buds and young plants, possibly half-a-dozen, or even more; and I have found that all that is necessary is to take a clean tumbler, pickle jar,

or other glass receptacle, put about an inch in depth of washed, coarse, wet silver sand at the bottom and drop the pieces aforesaid loosely on to the surface, as many as will cover it. Put a slip of glass on the top of the tumbler and stand it in a well-lighted position, but out of direct sunshine, leaving it then severely alone. In about a month after the commencement of the growing season there may be detected a number of little whitish pimple-like growths starting from various points on the surface, and these will very soon develop fronds and roots, when they only require to be transferred to soil in pans to develop in course of time into specimens. There is no hurry for this, as they will grow for a long time as they are. When the little plants have asserted their individuality sufficiently, they should be separated. Many old plants, which may appear to be quite dead, may be resuscitated by this tumbler treatment so long as their root-stocks are not entirely rotten to the core. All that is necessary is to shave off all decayed portions with a sharp knife until the live portion is exposed, and then either cut them up or drop the mass intact on the sand, when bulbils will be formed.

The Shield Ferns or *Polystichums*, since they form definite circular crowns with more firmly-attached frond-bases, do not lend themselves to the same separative process, and to secure a batch of young plants the cultivator must be content to sacrifice a specimen, though in a very old plant, which has formed a trunk, the lower portion of the latter may be cut away to serve this purpose and the upper part repotted. In this species the root-stock consists of a large mass, but it is built up on fundamentally the same principle as the Hartstongue. Our plan with this species is to trim off all fronds, roots, and dead matter, and cut the residue perpendicularly into several sections, placing these on wet sand in glasses as already described, or embedding them in fresh, damp cocoanut fibre. Bulbils will be developed in abundance and grow at the expense of the energy and nourishment contained in the mass whence they spring. In course of time each piece will become a clump of young sturdy Ferns, and a sharp knife must then be used to part them, each one, as far as practicable, being cut away with the piece of old root-stock to which it is attached, and afterwards planted in small pots or pans and kept close until established. The original growing centre which is apt to assert itself if not separated as above, should be scraped out, as it handicaps the formation of bulbils.

The Lady Fern (*Athyrium*) also lends itself to this method of propagation, but requires peculiar treatment; each old frond leaves a long persistent stump tapering downwards and connected to the caudex proper by a narrow neck, and as the bulbils are only produced in the axil of this junction, a small portion of the central caudex must be cut away in conjunction with the frond, the stump being then inserted as a cutting on the wet sand aforesaid, and the rest of the process being identical.

Lastrea montana, the lemon-scented Buckler Fern, is very prone to produce abundance of bulbil plants from pieces of old caudex, and as this Fern and its numerous beautiful varieties are peculiarly difficult to raise from spores, and the bulbil plants are much more robust and vigorous in their primary growth than those produced by spores (a remark which applies, indeed, to the other cases as well), we have obviously a valuable means of propagation in this system, which also possesses the merit of extreme simplicity. Apart, too, from bulbil inducement, I have succeeded in reinstating numerous rare Ferns which, owing to sour soil or other reasons, under ordinary conditions would have died entirely, but on digging them up or turning them out and shaving away the dead portions, so long as there remained any central vitality, the exposure of this to light enabled either the central axis of growth to start afresh, or, failing

that, bulbils appeared, and thus the variety was saved. It appears as though there were a general tendency for such resuscitatory growths to occur, but under unaided conditions of massed dead matter it remains inoperative. Furthermore, insertion in soil is apt to help further rotting and induce sourness, while the full exposure to light on the surface of the sand obviates this risk and gives the best possible chance of a fair start. *Chas. T. Druce.*

A NEW MALADY OF NARCISSUS.

SEVERAL horticulturists in the neighbourhood of Toulon, who grow for the cut-flower trade various sorts of *Narcissus*, e.g., *N. Tazetta* fl.



FIG. 169.—*MALACOSOMA LUSITANICUM*, AN INSECT PEST OF BULBOUS PLANTS. (MUCH MAGNIFIED.)

pleno, *N. aureus*, *N. papyraceus*, &c., have experienced a serious loss during the last season, owing to the damage done to bulbils by a destructive larva of some insect. The matter has been studied by M. Valéry Mayet, the distinguished professor of entomology at the Ecole Nationale d'Agriculture at Montpellier. He has reared the larvæ in question, and finds them to belong to a beetle named *Malacosoma lusitanicum*, belonging to the family *Chrysomelidæ*.

This insect is very abundant in the central region of France, and at the beginning of May is common on the flowers of various *Compositæ*. It particularly affects those of *Urospermum dalechampi*, which are sometimes literally covered by the beetles. The larval form has hitherto been unknown, but it seems likely that it normally lives on the bulbs of species of *Grape-*

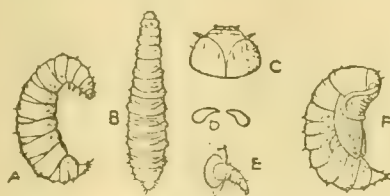


FIG. 170.—*MALACOSOMA LUSITANICUM*. A, B, larva; F, pupa; C, head; D, mandibles; E, foot.

Hyacinth, probably on those of *Muscari comosum*, although this has not yet been definitely ascertained.

The larva or grub is white in colour, and is about $\frac{3}{8}$ inch long and 1-12th in thickness. The head is small, and is provided with a couple of three-jointed antennæ and with mandibles, which are only adapted to deal with soft tissues.

Several of the grubs are often met with in a single bulb, but sometimes, when the attack is a severe one, there may be more than a dozen living in a more or less decomposing mass. The larvæ enter on the pupal stage during the early part of April, and the perfect insect escapes about the beginning of May.

M. Valéry Mayet advises the taking up of the bulbs and a disinfection of the soil by means of bisulphide of carbon, applied at the rate of 240 lbs. per acre.

As a further measure, it is recommended that the beetles themselves should be collected and destroyed, which can easily be done, as they do not readily fly, but allow themselves to be caught without any difficulty. *F. D. nis, Balaruc les Bains, France.*

LEMON CURING IN AUSTRALIA

FOR our supply of Lemons we are accustomed to look to Spain, Portugal, and the Azores, and especially to Sicily, from whence the largest exports are made. This, together with the recent scarcity, and consequent high prices that have prevailed in the English market for this useful fruit, will impart some interest to English consumers in an article on the "Curing of Lemons" in a recent number of the *Agricultural Gazette of New South Wales*. The writer says: "While there is no country where this fruit will thrive better than in Australia, and perhaps none where it can be more easily cured than in the drier parts, there has, on the other hand, been some difficulty in curing the fruits when they have been grown along the coast, where the atmosphere is more humid, so that they require nothing but proper cultivation to keep them growing and producing good crops annually. If it were found possible to successfully cure these fruits generally, great advantages would result to the growers. If, however," the writer says, "it is impossible to store and keep the Lemons for months on the coast, as can be done in the dry climate of our interior, they can at least be kept for a short time after picking—long enough, at any rate, to greatly improve the condition of the fruit, and no one can fail to notice the difference between a cured and an uncured Lemon. The one has a nice, fine skin and is full of juice, whilst the other is hard and thick-skinned, from which it is difficult to extract the juice." Almost as much care is necessary in picking Lemons as in handling eggs, decay being very liable to set in if the skin be bruised. The majority of growers, however, simply pull the fruits from the tree in a rough and careless manner and throw them into baskets, which are often roughly dumped into a cart without any thought of injury produced in consequence of bruising. Much of the fruit is also simply packed in cases, without any attempt at curing; but the advantages of the system of curing are that they can be kept for a considerable time, often with pecuniary advantage to the grower, inasmuch as they can be put on the market during periods when the fresh fruits are not available or are scarce. The methods adopted for gathering and curing are as follow: The fruits should be taken from the plants just as they are beginning to turn ripe, and when they are about 2½ inches in diameter. When they are over this size the skins become thick and suitable only for making candied Lemon peel. After picking they are allowed to stand for a few days in a large, airy building where they will neither sweat nor shrivel, after which they are packed in paper-lined boxes, which may be stacked in such a manner as to allow a free circulation of air, not only from the roof and sides, but also from the floor, which is raised 3 feet clear of the ground, the blocks of stacked boxes being enclosed by canvas curtains which can be opened or closed at the angles as occasion may require. The fruits are looked over occasionally, and if they are found to be keeping well they may be left for several months until they are thin-skinned and pliable, but they should be marketed before the skin shows the least sign of hardening.

The object in curing Lemons is to reduce the thickness of the peel and make it tough; it also increases the juiciness and keeps it in good condition for a longer period than would be the case without curing. *John R. Jackson, Claremont, Lymington, Devon.*

MARKET GARDENING.

EARLY TOMATOS.

TOMATOS, like Potatos, in their different varieties are curiously partial to certain soils positions and surroundings, therefore one variety may crop well with one grower, whereas with his nearest neighbour-in-trade the same kind will be a failure.

Holmes' Supreme, Winter Beauty, Lister's Prolific, Hipper No. 1, Lawrencon's No. 1, and Up-to-Date have proved very serviceable varieties to me, and any grower may choose from them one or more sorts that will meet his requirements.

It is usual to sow seeds at the latter end of August in a moderately warm position near the glass. The surface of the soil is kept moist and covered with paper until the seeds have germinated. When the first rough leaf is well developed, the seedlings are potted off into small 60-size pots, and placed in a warm moist atmosphere until they have become established in the soil, after which time they are transferred to a cold frame, admitting all the air possible by removing the lights except in windy or wet weather, when air should be admitted as far as circumstances will allow. The plants should be arranged on a cool moist bed, and be watered sparingly, so that the tissues will harden. This helps to keep the plants dwarf and sturdy. They may remain in the frames until November, just keeping them free from frosts and excessive dampness. Shift the plants into 5 or 6-inch pots, taking care to keep the plant low, not filling the pots with soil to more than about three quarters their depth. Remove the plants to a cool house, keeping them close to the glass to promote sturdiness and allow them to grow steadily. The plants will later on require a top-dressing with fresh soil containing a little grit and wood ashes. When these pots are full of roots shift the plants into pots 8 inches or 9 inches in diameter that may have been used for Chrysanthemums, placing one or two plants in a 9-inch pot as may be thought desirable. Some growers use two plants, but I find one plant much better. Adopt the same method of potting as in the previous shift, and top-dress as required, using new, rich soil containing grit, soot, wood ash, or manure from a spent Mushroom-bed. If the soil is too rich it will totally defeat the object in view, that is, a well-ripened stem. A very careful use of the watering-pot and attention to the dryness of the atmosphere are essential. Stop all laterals, and as the trusses of bloom appear pinch out the centre one: this operation will ensure a more regular swelling and size in the other fruits. The most critical stage in their culture is reached when the fruits begin to set, but this process may be encouraged by keeping a dry atmosphere, affording less moisture at the root, and by tapping the strings or other supports of the plants to ensure proper pollination. A close scrutiny is needed in order to perceive that the setting is going on favourably; some kinds set their fruit so much more freely than others. When three or four trusses are showing signs of producing fruits, and they may safely be considered as swelling all right, then stop the plant, promote a quicker root-action, and hasten the flow of the sap by applying more heat and more root-moisture, but do not permit the atmosphere to become too moist. Apply a little stimulating manure occasionally—superphosphate I find the best, with a little potassic guano when the fruit is colouring. Much of the success of the earliest crop will depend upon the amount of sunshine early in the spring; but if the foregoing cultural details are intelligently carried out the grower will be amply rewarded in finding his crop much in advance of later-sown plants; these he will find very useful to follow on as a main crop, and his pots will be in time for use for Chrysanthemums again. *Birmingham.*

TREES AND SHRUBS.

NANDINA DOMESTICA, THUNB.

THE genus *Nandina* is monotypic, that is, it is represented by one species only, a small, half-hardy evergreen shrub, native to Japan, where it is said to find a place in every little garden.

To the Japanese *Nandina domestica* is known as the "Heavenly Bamboo," an appellation somewhat difficult to account for, but no doubt the Japanese, who are able to appreciate form as well as colour, see much to admire in its graceful stems and elegantly-cut foliage.

In this country *Nandina domestica* forms a shrub about 6 to 8 feet high, composed of upright stems clothed with compound bi-ternate leaves, gracefully disposed on the branches, and in a young state prettily tinted with red. Small examples with coloured foliage have been included in groups of ornamental shrubs at several recent meetings at the Horticultural Hall.

The flowers, small, white, and not very conspicuous, are borne in terminal panicles, and are interesting botanically in that the calyx is polycyclic: that is, the whorls of segments of which it is composed merge into the corolla without any sharp division. The anthers open by slits and not by the pores characteristic of members of the Berberis family to which *Nandina* belongs. The great feature of the plant is the panicle of bright red fruits which succeed the flowers; each berry, about the size of a pea, contains two peculiar seeds, concave on one side and convex on the other. Except in favoured situations the species requires a warm spot, sheltered by a wall, or the protection of a cool house; but where it will succeed it is a subject well worth attention.

A figure of a flowering spray is given in the *Botanical Magazine*, t. 4880.

CLERODENDRON FÆTIDUM, BUNGE.

Two species only of the genus *Clerodendron* are hardy in this country, namely, *C. trichotomum* and *C. fœtidum*, both natives of China. The first-named species forms a small tree, and produces dense corymbs of red and white flowers during the summer months. *Clerodendron fœtidum* is a deciduous shrub, 3 to 6 feet high, with dark green cordate leaves, 5 to 7 inches long, strongly veined and reticulated, downy on both surfaces, the margin coarsely serrate. A purplish appearance is given to the whole plant, and especially to the younger portions, by the presence of a velvety purple pubescence with which it is clothed. The flowers are produced in dense terminal corymbs, and are of a rich, deep, purplish crimson in the bud passing to rose pink as they expand, and becoming paler before they fall. The lateral growths which arise from the base of the inflorescence somewhat hide the blooms, but even then the plant is attractive.

The flowers are not foetid, but the leaves on being handled emit a rather unpleasant odour, which probably accounts for the specific name.

Although introduced many years ago by Fortune, it is not a common plant in the neighbourhood of London, and its tenderness no doubt accounts for this. In the gardens of the south and west of England one frequently meets good specimens growing in the open, and a short time since a plant in flower was noted at Kew, growing in the beds near the Temperate House, without any protection beyond that afforded by the neighbouring shrubs.

It is figured in the *Botanical Magazine*, t. 4860.

CARYOPTERIS MASTACANTHUS,

SCHAUER.

THIS plant (see fig. 171) is sometimes known by the rather misleading name of the "Blue

Spiræa." Some half-a-dozen species of *Caryopteris* are known, all of which inhabit Eastern Asia, but so far *C. Mastacanthus* is the only species of the genus in common cultivation. Originally introduced from China by Fortune about the year 1845, it was treated as a greenhouse subject, and after its novelty had worn off, was discarded for more showy subjects and apparently lost. Its second introduction is due to Messrs. Veitch through their collector, Charles Maries, who found it in Japan in fields, rocky places, and on mountains. It is a small shrub, about 3 or 4 feet high, with opposite grey leaves of somewhat variable shape, but usually ovate or oblong-ovate, 1 to 3 inches long, with finely-serrate margins. In the axils of the uppermost leaves are borne clusters of bright blue or violet flowers—a colour not common in the flowers of shrubs at any time, and particularly valuable at this late season of the year.

From its small size and neat appearance this shrub is an appropriate subject for the herbaceous border, and telling combinations may be made by associating with it white or yellow-flowered border Chrysanthemums.

Although fairly hardy, it is liable to be cut by frost, but when this occurs numerous small shoots are produced from the base, which flower the same year. It succeeds best in a well-drained sandy soil in a sunny position. *H. Spooner.*

WINTER-FLOWERING SHRUBS.

ANY plant that blooms in winter has a higher value than it would have if it flowered during any other time of the year. From November to March there are a score or more hardy shrubs that come into bloom and help to brighten the garden. Most of them are hardy in their flowers; that is to say, though frost may cut the opened flowers, yet the unopened buds will come out as soon as more genial weather prevails. The exact time of flowering varies according to the weather in a particular winter; but, broadly speaking, in November there is *Daphne Mezereum* var. *grandiflora* (D. autumnale), with bright red, sweet-scented flowers, and the golden-yellow-flowered *Jasminum nudiflorum*. A genial December will see *Erica mediterranea* var. *hybrida*, rosy red; *Rhododendron Nobleanum*, bright crimson; and *Cratægus monogyna* var. *præcox* (the Glastonbury Thorn) in full beauty. During January, February, and March we usually get *Berberis nepalensis*, pale yellow; *Chimonanthus fragrans*, cream coloured and sweet scented; *Daphne Mezereum*, red, and *D. M.* var. *alba*, white; *Erica carnea*, red; *Hamamelis arborea*, H. japonica, and H. j. var. *Zuccariniana*, all of various shades of yellow, and having curiously twisted petals; *Viburnum tinus*, white; *Lonicera fragrantissima* and *L. Standishii*, white, the former sweet scented; *Prunus Davidiana*, red, and *P. D.* var. *alba*; and *Rhododendron præcox*, rosy-lilac. These are all easy to cultivate, and can be recommended as thoroughly hardy. They should be planted in small clumps, which give a better effect than when isolated plants are employed. Half-a-dozen *Hamamelis arborea*, *Daphne Mezereum*, or, in fact, any of these winter-flowering subjects are capable of providing welcome colour for weeks together during the dullest period of the year. A sheltered position is usually recommended for these plants, but I have found them less liable to injury by frost if planted in a position that is fairly exposed but is shaded from the east, so that they are not subjected to the early morning sun. It is not so much the frost that injures plants, it is the sudden thawing afterwards. *J. Clark, Bagshot, Surrey.*



FIG. 171.—CARYOPTERIS MASTACANTHUS: HARDY SHRUB, FLOWERS LAVENDER-BLUE.

(See p. 408.)

HORTICULTURAL CONDITIONS IN CANADA.

It might be thought by those not knowing the conditions that Canada is for the most part a land of frost and snow, but when it is stated that in the prairie provinces alone, which are now being rapidly populated, there are estimated to be 171,000,000 square miles suitable for cultivation, and that at least one quarter of this area could be planted with Wheat annually, so as to produce a crop estimated at over 800,000,000 bushels, it will be readily seen that the future possibilities of the country are great. The United States at the present time produces less than 700,000,000 bushels of Wheat, but supplies her population of over 80,000,000 persons, exporting the surplus.

The fruit areas of Canada are large, sufficiently so to produce fruit enough to meet the needs of Canada—and the rest of the world, for that matter—for certain kinds of fruit, particularly the Apple, for many years to come.

Beginning with the great province of Ontario, 220,000 square miles in area, larger than the States of New York, Ohio, Illinois, and Michigan together, we have large districts where Apples, Pears, Peaches, Plums, Cherries, Grapes and the small fruits can be grown to perfection. The province of Quebec is considerably larger than Ontario, and, while the tenderer fruits do not succeed, Apples are being grown in increasing quantities yearly. From east to west in the provinces of Quebec and Ontario there is a belt where Apples and other hardy fruits can be grown of about 700 miles in length, while in the province of Ontario alone the best winter Apples, Pears, and Plums can be grown successfully over an area about 350 miles long and from 30 to 150 miles in width. The successful culture of Peaches in Ontario is confined to the Niagara district and some points along Lake Erie, but the area suitable for growing this fruit is extensive enough to supply a large population.

Nova Scotia has long been noted for her Apples. The most favoured districts are the Annapolis and Cornwallis valleys, where Apples, Pears, Plums, and Cherries can be grown, and where even Peaches can be successfully raised. These valleys have a total length of about 100 miles, and vary in width from 6 to 11 miles. Fruit culture is not confined to this district, but over most of the province the hardier fruits can be grown successfully. New Brunswick has not yet developed her fruit industry to any great extent, but in some of the valleys Apples and other hardy fruits of the finest appearance and best quality can be produced.

Prince Edward Island, the smallest province of the Dominion, produces excellent tree fruits, and, owing to the late season, the Apples grown there keep better than in any other part of the Dominion.

British Columbia, the area of which is about 370,000 square miles, or more than twice the size of California, has large sections of country splendidly adapted to fruit culture. Like the states of Oregon and Washington, with which her natural conditions may be compared, British Columbia has a number of districts where the conditions all differ from one another. Three of these are: first, that in the damp coast climate of Vancouver Island and the lower mainland; second, in the dry interior country where irrigation is, as a rule, necessary; and third, in the Kootenays, east and west, where irrigation is necessary only in places. In these districts all the best fruits, including Peaches in some places, can be grown to great advantage.

The prairie provinces of Manitoba, Saskatchewan, and Alberta, and the great districts to the north produce excellent bush fruits, but the tree fruits have, for the most part, not done well up to the present, although the time is coming when these provinces will be producing Apples and Plums of their own.

These are the possibilities of fruit culture in Canada. What are the actual facts?

When the last census was taken, in 1901, the

total number of fruit trees in Canada was 21,201,239, and it is thought that the number has increased by at least 10 per cent. since that time, making the total number now over 23,000,000 trees, occupying about 410,000 acres, with a capital value of nearly \$75,000,000.

There is an annual export of Apples from Canada of from 1,200,000 to 1,500,000 barrels, the province of Ontario supplying about 1,000,000 of these and Nova Scotia from 300,000 to 500,000, a limited quantity going from some of the other provinces. British Columbia, which is now producing increasing quantities of fruits of many kinds yearly, is bending her efforts to supplying the prairie provinces, and has been very successful in placing her fruits on these markets in good condition. Ontario is a close competitor of British Columbia for this trade at present, but the increase in population is so rapid that it will take both provinces to supply the demands for a long time to come.

What are the influences affecting Canadian horticulture to-day? The Dominion experimental farms, now seven in number, upon which work was begun over 20 years ago, have played an important part in developing Canadian horticulture. There are the provincial agricultural colleges, of which, with their experiment stations, there are four, which disseminate information both by means of the students who are trained there, and also by literature. The provincial experiment stations and model orchards, which in all are between 50 and 60 in number, are also doing much to demonstrate the possibilities of fruit culture in their several districts. Seven provincial fruit-growers' associations lend their aid in spreading a knowledge of the best methods of fruit culture and of uniting the growers for purposes of co-operation and legislation. The horticultural literature of Canada, although represented by few papers, has done much to aid fruit, flower and vegetable growers.

The farmers' institutes and orchard meetings organised by the provincial Governments, and assisted by the Dominion Government, are very practical and helpful.

The horticultural societies assisted by the provincial Government, of which there are 63 in the province of Ontario, are doing splendid work in awakening a greater interest in horticulture and in spreading information.

All these factors affecting horticultural conditions and progress in Canada have been made to bear still better fruit by the co-operative movement which in recent years has made such strides in Canada. In the province of Ontario alone there are 40 co-operative associations which now have a central organisation where plans affecting the welfare of all the associations are discussed. These associations are doing much to ensure that the fruit which is sold shall be more uniform in character, and thus to bring better returns to the producer. One of the best influences affecting horticultural conditions in Canada is the Fruit Marks Act, passed in 1901, and operative over the whole of Canada. By this Act, growers are compelled to pack their fruit according to certain standards, and are liable to fine if they do not do so. Inspectors are stationed at packing houses, on the markets, and at the ports of export, who examine the fruit and see if it has been packed according to law. A marked improvement has been noticed in the Canadian fruit exported since this law went into effect. There are also standard Apple barrels and boxes and baskets for the whole of Canada, all of which make the packages for the different fruits more uniform. It may be said that Canadians are taking advantage of all these influences for good, and are adopting the latest and best methods in horticultural practice.

The development of floriculture in Canada has been rapid. Notwithstanding the severer winters than those to the south of us, the plant and cut-flower trade has developed wonderfully, the increase in the value of trade being 400 per

cent. during the past 10 years. It has been estimated that the amount of capital invested in greenhouse equipment, stock, &c., is \$5,000,000, with an annual value of trade transacted of \$2,000,000. This is but a beginning, as Canadians love flowers.

We must not omit the growing of vegetables, with which Canadians are well supplied. The truck interests are growing rapidly as our cities increase in population.

At the beginning of the 20th century Canada has about 6,000,000 of a population, or, approximately, as great as the United States had at the beginning of the 19th century. It has been said that the 19th century was for the United States but what the "20th century is for Canada." We believe that this is true in regard to horticulture, as in other matters. *W. T. Macoun, Central Experimental Farm, Ottawa, Ont.*

VEGETABLES.

LATE PEAS.

SOME years ago a writer in the *Gardeners Chronicle* asserted that we grew far too many varieties of culinary Peas, and that, no matter whether for early, mid-season, or late supplies, all that was really necessary was to select two (or it may have been three, one's memory cannot always be trusted with numbers) early kinds, which thorough trials have proved to be the best suited to the soil of the garden, and grow them exclusively, making successional sowings throughout the season. The writer declared that, with due attention to cultural details, these few kinds would furnish pickings equally heavy, and of equal flavour to the mid-season kinds, and far superior to the late varieties. The number of new sorts, and especially late ones, which have been placed on the market during the past decade, is ample proof that this advice was not largely followed.

Due, perhaps equally, to the fact that the kitchen garden here slopes sharply to the north-west and that the autumns in Cornwall are usually decidedly damp, our late Peas were mostly comparative failures. Trials of different late varieties, all of them recommended as being the finest Peas for autumn-cropping, made but little difference. They still grew only too well, but refused to produce good crops. Careful experiments during the past four years have conclusively proved the value of early Peas for yielding late crops, where the standard late-season kinds have practically failed to yield satisfactory pickings. These early kinds when sown late are perhaps more subject to attacks of mildew than are the older late varieties—*Ne Plus Ultra*, for example—but proper attention to cultural details prevents any loss on this account. The late-sown early varieties consistently grew from 9 to 12 inches, according to the season, taller than the same kinds do in the summer; but this was only to be expected, and even then they did not attain the great height of many late kinds, thus effecting a saving in space. As a rule, all Peas are sown much too thickly, and the rows are also placed too closely together. Since the Sweet Pea has gained so much favour as an exhibition flower, most gardeners have thoroughly realised that to obtain first-class blooms the plants must be allowed ample room for development; so the seeds are carefully sown 2 inches apart. But it is not at all uncommon in gardens where the Sweet Peas are grown on these common-sense lines to see the edible Peas sown almost as thickly as possible, thus raising up rows of weakly, spindly plants ill-fitted to yield a profitable return for the money and labour spent on them. Small wonder that a week's dry weather causes such plants to "give-up." It is essential, especially for late crops, that the seeds should be sown thinly in the rows, and that the rows should be made at least as far apart as is equal to the height the plants are expected to grow. *A. C. Bartlett, Pencarrow Gardens, Cornwall.*

FLORISTS' FLOWERS.

EXHIBITS OF DECORATIVE CHRYSANTHEMUMS.

No one who takes an interest in Chrysanthemum shows can fail to have noted the great advance made during the last three years in the exhibiting of decorative Chrysanthemums. Private gardeners, as distinct from the large exhibitors, know the advantage of free-flowering varieties for home decoration, either as plants or for the purpose of providing flowers for use in a cut state. Compared with these, it may be said that the culture of the large-flowered Japanese is expensive and unproductive. At the recent shows I have noted the steady increase of this decorative type of flowers in groups of Chrysanthemums where the words "arranged for effect" is the leading feature, and distinctly pretty groups have been made. At Weybridge, for example, Mr. Pagram, a noted cultivator of small-flowered varieties like Snowdrop and Primrose League, as well as others of the best single-flowered varieties, had a distinctly effective group, introducing amongst these some few well-grown Japanese Chrysanthemum blooms, Palms and Bamboos.

The advantage of these small-flowered sorts in a limited space is that greater freedom can be allowed in the arrangement, and they do not present nearly so stiff an appearance. At the York show, one large class is set apart for a group of decorative varieties, and with satisfactory results. Classes for so many bunches of decorative varieties arranged either with their own foliage or with some addition are now almost universal, and it is a sign of the times to see how the visitors crowd around the leading exhibits in these classes, it being not uncommon to see as many as ten competitors in one class.

By the addition of suitable foliage, such as Scarlet Oak, Prunus pissardii, Spiræas, Berberis Thunbergii, Ampelopsis Veitchii in sprays, Croton leaves, large-growing Ferns, such as tinted bracken, &c., and by the use of good-sized vases, a distinctly decorative effect can be obtained, such as will perfectly illustrate the Chrysanthemum as a decorative flower. The main point is to select the most suitable varieties for the form of decoration required. Bronze is a favourite colour, of which Source d'Or, Lord Brooke, and Bronze Soleil d'Or are notable examples. Rich colours, like Roi des Prêcôces, Market Red, Tuxedo, Julia Lagravère, Mme. Bernard, Etoile de Feu, Cullingfordii, Caprice du Printemps, and Mrs. R. F. Felton are valuable. Amongst yellow varieties there are Bullion, Allman's Yellow, Framfield Yellow, Glitter, Lizzy Adcock, Mrs. G. Beech, Negoya, and Yellow Princess Victoria. Pink varieties are very numerous, and include Framfield Pink, Dr. Enguehard, Lady Hanham, Pink Ivory, Morton F. Plant, Mdle. Gabrielle Debie, and Margot. White-flowering varieties are always appreciated, as they appeal to so many persons for purposes other than that of exhibition. Sœur Melaine is still much appreciated, and Elaine, which was one of the earliest raised of Japanese varieties. Money-maker, Winter Queen, Ivory, Niveum, Mdle. Thérèse Pankoucke, Mdle. Lucie Duveau, Le Cygne, Guy Hamilton, Simplicity, Mrs. J. C. Neville, Miss Stopford, Mme. Nagelnackers, Mrs. J. Dunn, Miss Alice Byron, and the delicately-tinted green Mme. Edmund Roger are all suitable for exhibition as decorative varieties. E. M.

AUSTRALIAN CHRYSANTHEMUMS.

Messrs. Kerslake, Brunning, and Pockett are probably three of the best-known Colonial raisers of new Chrysanthemums. Their efforts in the work they have undertaken are now well known, and, from what we can learn, the Australian-raised flowers do far better in America than the European varieties. Colonial seedlings are also severe competitors with the

Continental ones. Messrs. Cannell and Sons and Messrs. Wells are two of the foremost introducers of these Antipodean novelties, and during a recent visit to these nurseries I noticed several good novelties. Golden City is a true Incurved flower of perfect form and moderate size; the colour is deep, pure yellow. Mrs. Henry Hughes is a large Japanese flower, with medium-sized florets that are twisted and curly; a very full, double flower of an old rosy amaranth shade, with silvery reverse. Richard Seddon is an attractive Japanese, with medium-sized florets. Mr. Herbert Bennett is a massively-built flower of the Incurved section, with broad, grooved florets of a rich shade of golden bronze, tinted inside with rosy carmine. Charles Beckett is a Japanese flower of large size: it has immensely long florets, and is a spreading flower; the colour is golden-yellow, shaded with bronze. Rose Pockett is a big, spreading flower of the Japanese type, having long, twisted florets; the colour is old gold, shaded with bronze. Mrs. L. Thorn is a deep, globular Japanese flower, with grooved florets, large in size, and of good substance. In colour it is pale canary-yellow. Frank Payne is a deeply-built Japanese flower, with narrow, drooping florets of great length; the colour is a soft shade of mauve.

In the Incurved section, probably the best of the Colonial varieties is Clara Wells, a grand novelty of golden buff shaded to pure yellow. Merstham Blush is a huge Japanese flower with long, twisted florets, which intermingle in the centre; in colour it is pale blush. Pockett's Surprise ought to justify its name, for it is a Japanese flower of the greatest dimensions, with broad florets of abnormal length, and curly at the tips; in colour it is deep purplish-rose, and the florets have a golden-bronze reverse. C. H. Totty is a compact, reflexing Japanese, with a good floret of medium width; the colour is golden-reddish chestnut, with a warm shade of golden-bronze on the reverse.

INCURVED CHRYSANTHEMUMS.

THESE old-fashioned florists' flowers are a long way from dying out, in spite of the very severe competition they have had to contend with since the introduction of the Japanese type. A few weeks ago, in one of the London parks, I saw a collection of some of the older favourites. The old race of Incurveds was in many respects a fine model of form when well grown and properly dressed, whereas the newer race, crossed, as it undoubtedly is, with Japanese blood, always appears more or less coarse. I wonder what would have been the verdict of some of our old friends if they could see the varieties that are popular as Incurveds to-day, and that occupy the leading place on our show boards.

It must be 20 years since the first of the Japanese Incurveds appeared, and I well remember the late Mr. E. Sanderson bringing to one of the floral meetings a dressed bloom of Comte de Germiny. We all thought it was a fine piece of work to turn a Japanese into an Incurved, but nowadays, with our newer type, we should not be surprised at such a feat if it were repeated.

Last year I noted in France some very promising novelties of the Incurved type, and they were described in the *Chrysanthemum Year Book*. With the exception of Miss Roosevelt, none of them seem to have been introduced into this country, and we are the losers by this oversight. Col. Labouchère, shown at Caen, was certainly one of the grandest of the type ever staged. This year there appear to be no French novelties in Incurveds.

At some of the English nurseries there have been seen a few excellent flowers, and of these Clara Wells seems destined to occupy a prominent place. Of fine form, it has massive, grooved florets that are very regular and of good substance. The flower is deep and solid, and

the colour golden-buff, passing to pure pale yellow towards the centre. Miss Roosevelt has succeeded well in England as it did last year in France. It is one of M. Calvat's seedlings, having broad, pure white florets, deep and compact in build, and very double. Mdle. A. Brunet is of M. Nonin's raising; it is a very good flower of rosy-purple colour, deep in build, and of fair size. Romance is a Colonial variety, and one of the best of the season, for it has been seen in excellent form. It is of perfect build, deep, and solid, with substantial florets; colour rich golden-yellow. Mr. Herbert Bennett is a fine, solid flower with broad, grooved florets of rich, golden-bronze. Violet Carpenter is a large, regular flower, having stiff, grooved florets of a shade of pearly blush. C. Harman Payne.

PLANT NOTES.

ARCTOTIS AUREOLA.

THIS old favourite still holds its place as a good spring-flowering plant for cultivation in the conservatory, the large orange-coloured flowers being specially welcome at this season of the year, when so few flowers of the colour are obtainable. The beautifully-cut silvered foliage is also very attractive.

The plants should be cut hard back in August and given the same treatment throughout as that afforded Pelargoniums. Good specimens can be grown in 6-inch pots, but they require careful watering until the pots have become well filled with roots. The plants need a sunny position at all times, and may be used out of doors during the summer months, especially in dry situations such as suit Gazanias.

Cuttings of this species are rather difficult to root, being liable to damp off if placed in a propagating case. I have had better results from placing the pots containing the cuttings on a shelf in a greenhouse, where they are kept almost dry; they lose most of their leaves, but grow away readily as soon as they have made roots. The species was illustrated in the *Gardeners' Chronicle*. E. J. Allard. [A. aureola is regarded by some authorities as a variety of A. aspera, of which species a supplementary illustration was published in *Gardeners' Chronicle*, May 19, 1906.]

CONTINENTAL NOVELTIES.

THE GRAPE-LIKE FUCHSIAS.

A CERTAIN class of Fuchsia has appeared on the Continent which is meeting with general favour as material for planting in beds, groups, and as pot plants. These are free flowering, and possess other good properties, besides flowering throughout the entire summer season; the newer varieties, many of which possess flowers of light colours, flower at a late part of the season a second time. The older of these Grape-like-bunch Fuchsias have more or less tender foliage, and by a lowering of the temperature lose many of their leaves, whereas the newer varieties do not fail in this respect, and are in growth and in duration of the flowers considerably improved—points in their favour found in but few varieties of Fuchsia. This class is particularly adapted for cultivation in pots, as the plants make numerous shoots quickly, and the bright tints of the flowers contrast admirably with the dark-coloured foliage of most of the varieties. The blooms appear in terminal panicles as in F. corymbiflora and F. serratifolia. The most valuable variety is Koralle, so called from the coral-red tint of the blooms: leaves, metallic-green; growth, vigorous and stately. Göttingen has flowers of a cinnabar-red tint, which are of large size, and the foliage very dark in colour; the variety Fräulein Bonstedt has rosy-red flowers, these being white at the tips of the sepals, and are

very effective as seen against the light green foliage; Perle has rose-pearl-coloured sepals, and the tips are almost clear white, the flowers being double and freely produced and the leaves brownish-green. Gartenmeister Bonstedt has flowers of an orange-red tint, and are of considerable size. The plant has resemblances to Göttingen, but is of an extraordinary bushy and compact habit. Eros has rose-pink blooms, and the points of the sepals being of a lighter tint, and the foliage dark green. While all the other varieties have pendant blooms, in this one they stand erect, and afford a peculiar charm. *Karl Ziskoven, in Möller's Deutsche Gärtner Zeitung.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Calanthes.—Plants of the vestita or deciduous section of *Calanthes*, and their hybrids that have commenced to open their flowers, may be removed from the East Indian house to the Cattleya house, where the atmosphere is drier and better ventilated; in such conditions the flowers will last much longer than if left in the warmer house, and will fade less quickly if required for cutting and for decorative purposes. From this time forward the plants will need but little water, as both foliage and roots will be gradually decaying. Immediately the spikes have been cut water should be entirely withheld. The plants may then be placed on a dry shelf in a house where the average atmospheric temperature is about 60°, and in a light position well up to the roof glass, so as to obtain the benefit of uninterrupted sunlight. The late-flowering varieties of the *C. Regneri* type should be still afforded water occasionally to enable them to develop their flowers perfectly.

Odontoglossums.—By this time plants of *O. citrosimum*, *O. Reichenheimii*, and *O. laevis* will have completed their growth, and the supply of water should be gradually discontinued. These species should be placed in the lightest and coolest part of the Mexican house, a similar but dry position in the intermediate house will also suit them during the resting season. Owing to dryness at the root, the pseudo-bulbs may shrivel, but this will not be harmful unless the shrivelling is excessive, as when the flowering period arrives, if the roots are kept extra moist for a few days, they will readily plump to their normal condition. During a mild winter these plants sometimes commence to grow prematurely, but if treated as resting plants, the growths make but little progress, and seldom fail to bloom at the proper season.

Angraecums.—The strong-growing *A. eburneum* and *A. sesquipedale* are now developing their flower spikes, also the charming *A. distichum*, a dwarf-growing species which produces hundreds of small snow-white flowers; these being of delightful fragrance, enhances the value of this species. *A. pellucidum* is also sending forth its long slender spikes, and it is necessary that they should be carefully guided over the surface of the compost, for if allowed to enter the soil they will certainly decay. These *Angraecums* grow well in a warm, moist atmosphere like that of the ordinary plant stove. The sphagnum-moss on the surface should be watered often enough to keep it in a growing condition at all times.

Platyclinis.—Amongst other plants in flower is the pretty *Platyclinis uncatia*, with numerous graceful thread-like racemes which are almost similar to the better-known *P. filiformis*, but the flowers are of a greener shade. The spikes are produced from the centre of the half-formed growths, and as the plant will continue to grow for some time to come, it should be given plenty of water until the small pseudo-bulbs are made up. Even then the compost must be kept fairly moist, for if allowed to become too dry, the leaves are apt to turn yellow and fall off. These latter remarks are also applicable to *P. filiformis*, which is now passing through its resting period. To prevent the plants losing their leaves, we take them down every morning and lightly spray them overhead, and on the underside of the leaves; the moisture also assists to prevent red-spider insects, with which these plants are liable to be in-

festated. The spring-flowering *P. glumacea* is already showing its rosy-coloured growths; if necessary, the plant may now be repotted, or the operation may be left to within a short time after the flowers fade. All of the *Platyclinis* root and grow freely in a compost of fibrous peat and sphagnum-moss, intermixed with a moderate quantity of small, broken crocks and coarse silver sand. Shallow Orchid pans are preferable to the ordinary flowerpot for these plants, being light and therefore easily suspended. The plants thrive luxuriantly when suspended near to the roof glass of the Cattleya or intermediate house. Select a shady position for them, and keep them there during the whole year round.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. Ford, Pencarrow, Cornwall.

Water Lilies.—During hard weather rats often attack the roots of *Nymphaeas* growing in open ponds. If severed leaves and floating pieces of root-stock are seen, they usually indicate that these pests are feeding on the roots. When this occurs the rats should be shot on the first opportunity, or irreparable damage may be done. *Nymphaeas* growing in shallow tanks and tubs will require protection during severe frosts. The tubs should be sunk into the ground, and a light frame covered with straw or bracken should be laid across them. During frosty weather the ice formed on the surface should be broken daily. This is especially necessary if the tanks or ponds contain goldfish.

The rock-garden.—Leisure may now be found to thoroughly inspect the rock-garden with a view to forming any desirable plans for its improvement. In gardens where the owners are in residence at this time of the year, it will be seen that a rigid adherence to Alpine plants, pure and simple, does not lend itself to any particular interest being shown in the rock-garden, now that these plants, immensely interesting and beautiful in their season, are more or less in a dormant state. As a matter of fact, such rockeries are at this period of a necessity decidedly dull. The addition of some berried shrubs and a few evergreens of moderate size would do much to relieve and brighten the rockery in winter. These must not be introduced in excessive numbers, or the result will be to transform the rockery into a poor kind of rock-shrubbery, an altogether undesirable proceeding. What is needed is simply to place some carefully-selected plant where it will "take the eye," and compel attention, and at the same time not interfere with the scheme of the rockery, or with its more characteristic occupants. The choice of plant and situation is a matter for individual consideration, but in general those planted will, perhaps, consist of berried shrubs which are of moderate growth, and are not of a dense habit, such as *Cotoneaster Simonsii*, *C. frigida*, *C. affinis*, and *C. laevis*. *Crataegus pyracantha*, *Hippophae rhamnoides*, *Pernettya mucronata*, several *Skimmias*, *Berberis vulgaris*, and the new *B. Wilsonae* will be especially valuable for such purposes. The Sweet Briar becomes profusely laden with brightly-coloured hips, as also do other species of *Rosa*. Amongst suitable evergreen shrubs there is a wide range of choice. *Berberis Aquifolium* is valuable; it is of moderate size, and during the winter, the leaves assume and retain most brilliant colouring. *Leucothoe Catesbaei* (syn. *Andromeda Catesbaei*) also becomes coloured in late autumn. *Gaultheria Shallon* and *G. procumbens* are of value. *Yuccas* also thrive in rockeries, and their distinct habit makes them attractive. For planting in the rockery itself the Pigmy Conifers are, for the most part, of too dense a habit, and as a rule are very unconvincing. Their proper place seems to be towards the top and beyond the boulders, giving an appearance in miniature of the trees seen along the higher slopes of hills. Where there is a slight recession in the higher part of the rockery, such a Conifer as an Irish Yew or a *Cupressus Lawsoniana erecta viridis* may well be planted. This will add greatly to the appearance of distance so desirable at such points. When such a tree shows signs of outgrowing its place, it should be replaced by a smaller one, or the contrary effect will be created.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

Provision for skating.—Few pastimes are so generally enjoyed as is skating, when opportunity arises for its exercise. Its admirers are confined to no one section of the community, and men, women and children can all equally participate in its pleasure. In our humid and mild climate the prospects of skating are generally so remote that the advent of hard weather and the prevalence of ice lead people to make the most of it while they can, and frozen lakes, ponds, and every place where there is suitable ice is soon thronged with pleasure-seekers. Generally speaking, very little provision is made in the average park for this form of winter recreation, as the presence of large sheets of water in such places is the exception rather than the rule. This being the case, it is to be regretted that public park authorities do not more often make arrangements for skating by setting aside and preparing some part of a park in such a way that it could be flooded a few inches during hard frost and converted into a skating-rink. If such an arrangement could be conveniently carried out, there is little doubt but that it would be exceedingly popular, and could even, if thought desirable, be made to amply repay any expenditure incurred in its construction. Although this might not produce such good ice as could be obtained on deeper water, the advantage of a longer period of skating, and the almost total absence of danger accompanying its use would more than compensate for this difference. Each winter, as the season for skating approaches, it is prudent to see that all ropes, ladders, barriers, notice-boards, and other necessary apparatus for using upon the ice are ready and in good condition, so that any defects will not have to be remedied at the last moment.

Protection of the ice.—As soon as a sheet of water freezes over in a park, every precaution should be taken to prevent sticks and stones from being thrown upon it. Children and irresponsible youths are much addicted to this practice, and if not deterred, would spoil the ice for skating purposes. To protect it properly often entails useless expense, as the ice breaks up just before reaching the bearing point. Yet there is always the possibility of the ice bearing, and if a smooth, clean surface is obtained it is well worth all the trouble and expense bestowed upon it. Where waterfowl are kept, it is necessary to preserve a piece of open water for their use; but this should be situated at some out-of-the-way place little used by the public. Where the water is deep no one should be allowed upon the ice until it is at least 3 inches thick, for when once thrown open to the public, it is not a question of a few, but of thousands using it. Hence the greatest care must always be exercised in determining its thickness and permitting its use. During the time skating is in progress in a park it is customary to have a large number of men employed in the earlier part of the day sweeping the ice, who, when the public take possession of it, act as watchmen, both to prevent disorder and assist in cases of accidents. It is always better to utilise the services of the regular staff for this purpose, who, by having a little previous training, are the better able to understand how to proceed in the case of the ice giving way than would casual labourers employed for the occasion.

Extension of hours.—As there are so few opportunities for skating in the southern parts of this country, when it becomes at all possible every facility should be given to the public to enjoy the pastime while it lasts by throwing the ice open after closing hours. On the few occasions during the past 15 years when the lake here has been frozen over, it has been customary to allow skating to continue till 10 p.m. While this has necessitated the provision of numerous lamps and the employment of an extra staff of watchmen, it has enabled great numbers to participate in enjoyment from which they would otherwise have been debarred.

Provision for sliding.—For the benefit and safety of visitors, and the convenience of those who may be unable to indulge in actual skating, a piece of ice—where there is sufficient room for the purpose—should be set aside by being roped off, for purposes of sliding, and all skaters should be excluded therefrom.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq.,
Nolwood, Alloa, Clackmannanshire.

Pineapples.—The removal of plants that have fruited will provide additional space for the succession plants, such as those which were obtained from early-autumn suckers. These latter plants having been potted-on and supplied with bottom-heat from the hot-water pipes, are now well rooted. Pines now resting, but which are expected to yield a supply of fruits presently should be watered very carefully, for at this dull season the roots require but little moisture, although the plants must not be allowed to flag from the effects of drought. The atmospheric temperature of the pit during the next six weeks should be kept at about 55° to 60°, the latter being the day temperature exclusive of sun-heat.

Early-fruited Pines.—The plants which have been subjected to cool treatment for the past eight weeks should be examined for the purpose of selecting the best specimens for placing in the pots in which they will fruit; when this has been done, the plants should be provided with a bottom heat of 80° to 85°. The atmospheric temperature of the pit should be 70° at night and 8° or 10° higher by day. Water the plants very cautiously, and do not apply any that is not tepid. Maintain a moist atmosphere in the pit by damping down the floors or paths once or twice each day when the temperature is high. Do not allow any water to collect in the crowns of the plants, which might happen if the atmosphere were overcharged with moisture. The remainder of this batch of Pines can be made to fruit later next year by keeping them in the lower temperature of 55° to 60°. Keep them moderately dry at the roots until they are wanted for starting into growth.

Peaches and Nectarines.—The early house having been cleansed and made ready for starting will need sufficient artificial heat to maintain a steady atmospheric temperature of from 40° to 50° during mild weather, falling a few degrees lower during severe frost. Admit a little air by the top ventilator when the weather is favourable, but close it again with sun-heat very early in the afternoon. Damp down the paths and borders each day, but do not syringe the trees or cause the atmosphere to become excessively moist at this season, the effects of which would probably be seen in an attack of mildew, and in the wood-buds advancing into growth very rapidly, thus weakening the fruit-buds.

The second Peach and Nectarine house.—Prune, cleanse, and dress the trees, &c., in the second early Peach and Nectarine house as soon as the leaves have fallen. Take the trees from the trellis, and remove all bare and useless branches. Tie the remaining branches into bunches as the work proceeds, so that the house may be washed with hot water and soft soap. Afterwards paint the woodwork if this is necessary, and in any case lime-wash the walls, mixing some flowers of sulphur with the lime. Wash and dress the trees with warm water and the Gishurst compound, as was advised in a previous Calendar. When this has been done, train up the shoots neatly to the trellis. Next remove 2 or 3 inches of the surface soil from the borders, and replace this with finely-chopped, turfy loam, to which a little fine-grade vine and plant manure has been added. When this has been done, test the border, and if it is found to be dry, apply a good watering, and mulch the surface soil with light stable manure. Thus will all be made in readiness for starting the trees when it is deemed desirable to do so.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to LORD CLINTON, BICTON,
East Devon.

The Orchard.—Apple, Pear, Plum, and Cherry trees usually cultivated as standards need an annual thinning of the branches; this work can be more conveniently done, and the tree will be the less likely to suffer severe check than would be caused by the cutting away of large branches; but this latter operation would become necessary, if the work of thinning were neglected for years in succession. Trees bearing only light crops, as was pretty general in the past season, make more growth than when carrying a full crop, and it is, there-

fore, the more necessary to remove useless "spray" branches each winter. Endeavour to keep the centre of the tree somewhat open and therefore the better exposed to the sun and air. A well-pruned tree should have no branches that inter-cross with each other; neither should it contain a thicket of young spray choking the centre. A good-sized chisel having a long handle, a wooden mallet, a pruning saw, and a standard tree pruner are necessary tools for the work of pruning standard trees. Each cut should be made as cleanly as possible, those made by the saw being smoothed over with the knife or chisel. Long-established trees might often be benefited if given periodical root-waterings of liquid manure during mild weather in autumn. Manure water is often allowed to run to waste at this season, although fruit trees are at the same time requiring manurial assistance. If the liquid is extra strong, it would be well to dilute it down to half its strength with clear water. Scions for use in grafting next spring should be correctly labelled and "heeled-in" under the shade of a north wall, where the buds will remain dormant until late in spring. The stocks to be worked with such scions may be cut back to within 6 inches at the end of the month.

Nuts.—These are too often neglected in the matter of pruning, for if the bushes are not attended to annually, they become an entangled mass of unfruitful wood. Such degenerated trees, or bushes, would be the better for being cut hard back, and for having the young growth so regulated in early summer by disbudding, that well-balanced heads may be obtained again after two or three years. Well-cared-for specimens should be left unpruned until the small pink female flowers, and likewise the male catkins, can be determined towards March. All suckers should be rooted out; the best may be planted in nursery lines if an increase of stock be desired. The ground between the established bushes may be given a dressing of manure, forking this in when the ground is in good workable condition. In forming new plantations, a dryish position is better than a very low, wet one, where spring frosts are liable to prevent a good "set." The Cob Nut bears more freely here than the Filbert, but it is well to have some bushes of each sort. Bushes should be planted at distances from each other of not less than 12 feet.

THE KITCHEN GARDEN.

By WILLIAM H. HENESS, Gardener to C. COMBE, Esq.,
Clitham Park, Surrey.

French Beans.—Seeds should now be sown in frequent succession and in considerable quantities to maintain a sufficient supply for the table. Until germination has taken place, the pots can be stood closely together, and in almost any position on or near the hot-water pipes, &c., but afterwards a light position near the glass should be afforded. In addition to the approved varieties of French Beans, the dwarf Butter Bean should be cultivated, as this will be found to answer to the same treatment admirably, and make an appreciable addition to the list of vegetables at this dull season.

Peas.—Seeds that were sown in the open during the months of September and October will now be well through the ground, and should have a little soot and lime sprinkled each side of the rows to keep slugs, &c., in check. Either some short sticks or wire guards will be needed to help in keeping the birds off and these will serve as a protection to the plants during severe weather. Sowings in 3-inch or 5-inch pots or boxes should now be made, either to succeed earlier plants or to serve as a first sowing. They should be placed in a cool house, and brought on very steadily, keeping them well up to the glass, and taking every precaution to ensure that the young plants will become as sturdy and hardy as possible; they will then be in the best possible condition for planting out-of-doors in their permanent quarters at the proper time.

Broad Beans.—Seeds of the Early Mazagan and of the long-pod section might be sown now in boxes: the former is very hardy, and will come into use a little in advance of the long-pod section, although it sometimes happens there are not many days difference. Until the time comes round for planting them out, these Beans may be afforded the same treatment as I have

recommended for Peas. In neither case should the seeds be sown very thickly, because this would result in some difficulty when the plants have to be lifted from the boxes for the purpose of planting in the garden. For the same reason plenty of rough material should be placed in the bottom of the boxes and pots for the roots to adhere to, for, although both vegetables are capable of withstanding the check caused by the process of transplanting, every precaution should be taken against causing a check of an unusual degree.

Cabbages.—These plants will have become a suitable size for standing well through the winter. While the weather still remains of an open character, let the surface soil be again loosened by the hoe, filling the drills up level as this work proceeds. Continue to keep a sharp look-out for slugs.

Artichokes.—Although it is not necessary to lift the entire crop for the safety of the tubers, as they would keep sound and in good condition if left in the ground, sufficient should be lifted and taken to the store-house to afford a supply during spells of hard, frosty weather.

Cardoons.—These appear to have succeeded unusually well this season, and if any considerably quantity still remain, it will be well to lift them and lay them in a frame or cold shed, where they will be protected from severe weather, as under these conditions they will keep in a proper condition for a period of several weeks.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq.,
Eastwell Park, Kent.

Early-flowering Gladioli.—The varieties comprising this beautiful section of Gladioli are especially suitable for pot-culture, and, whether grown for use as pot-plants in the conservatory or for cutting purposes, they are equally appreciated during the spring and early summer months. If the work is not already in hand, no time should be lost in procuring the corms and potting them up. For this purpose the compost should consist of two parts good turfy loam to one part of leaf-soil, adding a little sharp sand. In the process of potting let a little sand be placed immediately under each corm, putting from 6 to 12 corms in each pot, according to the size of the corms, which varies considerably. Pots 4½ or 6 inches in diameter are large enough for this section of Gladioli, but if pots smaller than these are used the plants are apt to suffer from want of water, the roots drying up very quickly in hot weather when the plants are in full growth. The white variety of G. Colvillei, known as "The Bride," is indispensable, and the corms being very moderate in price, it should be grown in considerable quantity. Other good varieties recommended for growing in pots are Queen of Holland, Delicatissima, Crimson Queen, Lucretia, Ne Plus Ultra, Pink Perfection, Ackerman, and Rosy Gem. These are some of the best decorative varieties. When the corms have been potted, place the pots in a cool frame, standing them on a base of ashes, and covering over the top of the pots with sifted leaf-soil or cocoanut fibre refuse. As soon as growth is detected this covering should be removed, or the plants will become much weakened at the "collar." When well-rooted, the plants may be placed in very moderate heat, the treatment recommended for Freesias in a previous Calendar suiting them admirably. Keep them well up to the light, and when the pots are filled with roots and the plants in full growth apply occasional waterings of weak liquid manure to assist the plants to properly develop the flower-spikes.

Primula sinensis.—The plants now developing their flower-spikes should be kept in an atmospheric temperature of 50° to 55°, affording a little air when the temperature reaches the latter figure, and allowing this to rise to 60° by sun heat. If the plants are strong and healthy, the spikes of bloom will be thrown well above the foliage, thus enhancing their beauty to a great extent. Applications of weak manure-water or a pinch of artificial manure will tend to ensure continuity of bloom, and keep the foliage a good colour. The "Duchess" strain is an improvement over all the types of the Chinese Primula, and should be cultivated in every collection.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, DECEMBER 21—German Gard. Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—38.4°.

ACTUAL TEMPERATURES:—LONDON.—Wednesday, December 11 (6 P.M.): Max. 51°; Min. 44°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, December 12 (10 A.M.): Bar., 29.3; Temp. 44°; Weather—Raining.

PROVINCES.—Wednesday, December 11 (6 P.M.): Max. 45° Bedford and Ireland W. coast; Min. 42°, Scotland N.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—Sale of Dutch Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY AND FRIDAY—Dutch Bulbs, Herbaceous Plants, &c., at 11: Roses in variety at 1.30; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

WEDNESDAY—Bulbs, Border Plants, and Perennials, at 11: Roses and Fruit Trees at 1.30: Palms and Plants and Standard Bays at 5; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

FRIDAY—Importations of Cattleia Mendelii and Odontoglossum pescatorei, Established Orchids, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Clearance Sale of the whole of the Herbaceous and other Plants and Bulbs at the Woodstock Nursery, Golder's Green, N.W., by Protheroe & Morris, at 12.

The Mutual Relations of Graft and Scion.

A considerable amount of doubt attaches to many of the statements, sometimes rather confidently put forward, as to the nature of the influence mutually exerted on each other by scion and stock in grafts. Nobody, of course, will refuse to admit that some sort of influence on the scion is likely to occur, since the condition of water supply is largely affected by the rooting character of the stock. But this is not the same thing as saying that a definite substance can pass from one to the other and produce specific differences of a material kind in the two consorting parts of the plant. There are instances, however, in which there seems to be good reason for thinking that such a transmission may occur. When variegated sports are grafted on to the normal green stock, it may happen that shoots which spring from the latter at a point below the insertion of the scion exhibit the phenomenon of variegation. In such a case it is difficult to resist the inference that some substance, probably some chemical substance, has passed from the scion to the lower part of the plant, and has there given rise to the same peculiarity which it had excited in the introduced shoot. It is certain that the substances common to both parts of the plant can travel from one to the other, for the sugars, &c., which are manufactured in the leaves must pass down to nourish the roots of the stock. But it is not so clear whether other substances can so pass, and yet definite

information on this point is very desirable in order to enable us to give a rational explanation as to how the two parts of a grafted plant may influence each other, and to what extent interchange of substances peculiar to each is possible.

Some recent experiments and observations of M. Ch. Laurent* have an interesting bearing on these questions, and are worth the attention of those who are interested in the theory and practice of grafting. It is a matter of no great difficulty to graft the deadly Nightshade (*Atropa Belladonna*) upon the Tomato. Both are, of course, Solanaceous plants, but the former is well characterised by its poisonous properties, which it owes to the presence of the alkaloid atropin. The object of the experiments was to ascertain whether the alkaloid would pass into the Tomato, and if so to what extent. The results were of considerable interest, and may be briefly summarised here.

When the Belladonna was used as the stock, none of the poison passed into the Tomato, which produced leaves, flowers, and fruit in the ordinary way, although one might have anticipated that the atropin would have passed upwards from the rootstock. On the contrary, when the Tomato was used as the stock, the Nightshade not only produced the atropin in its own tissues, but the alkaloid passed down and was recognisable in both the stem and root of the Tomato. A case of special interest was that in which the Tomato was allowed to retain some of its own branches in addition to the graft. Under these circumstances it was found that the alkaloid only permeated the tissues of the Tomato up to the level of the spot where the scion was borne, and, as might have been expected, it was more abundant in the roots and stems than in the leaves.

Now, whilst it is obviously premature to base large conclusions on the comparatively few exact investigations which have been as yet carried out in this difficult but important field of investigation, they do throw a suggestive light on the probable nature of the influence which is seen in vines, for example, when one sort has been worked on another, influences which several of our correspondents have recently pointed out in these columns, whilst indications are also afforded as to ways of possibly obviating the attacks of certain diseases.

Hints for School Gardens.

Amongst the numerous publications issuing from the Imperial Department of Agriculture for the West Indies, a very useful little pamphlet of 56 pages in handy form has recently made its appearance. It is entitled *Hints for School Gardens*, and is published at the low price of fourpence. The book is written by Mr. A. H. Kirby, Agricultural and Science Master at Antigua, and the object for which it has been published is well stated in a brief preface by Sir Daniel Morris, the Imperial Commissioner of Agriculture. From this we learn that "practically every primary school in the West Indies now includes elementary agriculture in its curriculum," and it is with the

view of meeting the increasing demand of teachers for directions in plant culture and the laying out of school gardens that the present pamphlet, which is an extension of one issued in 1901, has been published. "Practical instruction in the elements of agriculture," it is truly said, "has an important educational value, as it affords an excellent opportunity for training even the youngest pupils in the habits of close and accurate observation. It also teaches them to examine carefully what they see, and to follow the connection between cause and effect. It further shows how the principles adopted in the field have been evolved from correct inferences based upon careful and accurate observation in the garden." The instructions given in this little book are classified under distinct heads, of which the following form part:—Size of plots, discipline, distances for planting and period of growth, tools, preparation of boxes and pots, ways in which seeds germinate, time taken by seeds to germinate, raising plants from cuttings and from leaves, transplanting into larger pots, and pollination for formation of fruit. Subjects are also given for preliminary lessons in the garden, and special instructions for the cultivation of vegetables, most of which are those generally cultivated in English gardens. There is also a chapter on budding, grafting, and pruning. In the matter of discipline the following extract will show the thoroughness aimed at in the teaching:—"A notebook must be kept by every pupil, showing the date when each piece of work was done, the method of procedure and the results obtained, and giving the reasons for the process. The notes should be based on the observations made and the work done in the garden, &c., and on the verbal instruction given by the teacher; they should not be dictated by him, for then they will be of far less value as a means of impressing on the mind the knowledge gained, and as an indication of the progress of the pupil. The weekly correction of such notes by the teacher is a matter of necessity." The pamphlet, with certain modifications to suit the requirements of different geographical areas, might be taken as a model for the guidance of the Higher Education Committees under the English County Councils.

OUR SUPPLEMENTARY ILLUSTRATION has been reproduced from a photograph of *Romneya trichocalyx*, Eastwood, taken by Mr. C. P. RAFFILL, who writes to us as follows:—"The genus *Romneya* was founded upon the well-known *R. Coulteri*, and until recent years has been looked upon as monotypic. In 1898 Miss A. EASTMAN, Curator of the Herbarium of the Californian Academy, published the description of a second species, viz., *R. trichocalyx*, together with the information that what had up till then been regarded as one was in reality two distinct species. Both are natives of California, and are very closely related, the chief differences being the hairy calyx, more slender habit, and profuse foliage of the *R. trichocalyx*. That the newer plant has good qualities may readily be seen from the accompanying supplementary illustration, in which the setose calyx is clearly shown. For garden purposes it is better than the older species on account of its freer flowering habit

* Sur la variation de la quantité d'atropine . . . dans les greffes de Belladone et de Tomate. Travaux scientifiques de l'Université de Rennes. Tome V.



Photograph by C. P. R. 1911.

ROMNEYA TRICHCALYX; VERY NEARLY ALLIED TO R. COULTERI.

and hardier constitution. The first record of the flowering of this plant in this country was published in the *Gardeners' Chronicle* for September 13, 1902, p. 191, when Mr. GEORGE NICHOLSON stated that he had received flowering specimens from the garden of Mr. H. C. BAKER, Oaklands, Almondbury. In November of the same year, seeds were received at Kew from Miss A. EASTWOOD, from which flowering plants were obtained in 1904, when a figure was prepared and which later appeared in the *Botanical Magazine*, tab. 8,002. Numerous plants have been raised at Kew both from seeds and cuttings. The new species has been successfully propagated from cuttings of the slender ripened shoots taken off in autumn and placed in moist, sandy soil under a bell-glass in an intermediate house. Although slow in forming roots, the young plants make rapid progress when planted out in the spring, and they flower the same year. The older species is known as one of the most difficult plants to root from cuttings, but it readily produces young plants from pieces of the thick, fleshy roots, and this is the usual method of propagation. It is well known that this plant is also difficult to move with success, owing, no doubt, to the brittle character of its fleshy roots, the slightest injury to which will often cause the death of the plant. *R. trichocalyx* is similar in this respect, and consequently should be planted out directly into its permanent quarters from the seed or cutting pot. The conditions most suited to the needs of the *Romneyas* are a light, open, well-drained soil, and a sunny position facing due south with protection from the north and east. Planted at Kew in positions similar to these, the plants of *R. trichocalyx* commenced to flower at the end of June, and have continued to produce quantities of flowers up to the present time."

THE BOTANICAL MAGAZINE.—The issue for December contains the index to the third volume of the fourth series (= vol. cxxxiii. of the whole work) and also a dedication to Miss WILLMOTT, of Warley Place. The following species are described and illustrated:—

GESNERA CARDINALIS, tab. 8,167.—This fine plant is characterised by the magnificent truss of brilliant scarlet flowers, which are borne in the axils of the upper leaves, and appear to be crowded owing to the shortness of the internodes in this part of the stem. It is of comparatively easy cultivation, and deservedly ranks high when considered from the decorative standpoint. The plant requires much the same treatment as the *Gloxinia*.

PRIMULA MUSCARIOIDES, tab. 8,168.—This species, from Western China, forms one of a closely-related group of *Primulas*, which is constituted by *P. cernua*, *P. pinnatifida*, and *P. deflexa*. Mr. G. FORREST says of it:—"The seed of this species was collected in Yunnan in December, 1894, on the summit of the Wild Yak Pass, situated on the dividing range between the Yangtze Valley and Chung Tien Plateau, at 14,000 to 15,000 feet. It inhabits moist, open, grassy situations on the margins of Pine forests."

PICEA MORINDOIDES, tab. 8,169.—An interesting account of this Eastern Himalayan species and of its possible relation with other species is given by Dr. STAFF. A specimen growing in Sir EDWARD LODER's garden at Horsham has produced cones for the first time in this country. A figure of a tree growing in the Earl of ANNESLEY's park at Castlewellan, Co. Down, was given in the *Gardeners' Chronicle* for May 5th, 1906.

DELPHINIUM CANDIDUM, tab. 8,170.—This is a beautiful white Larkspur from Uganda. The plant is a perennial, and bears flowers about

2½ inches across, which are sweet-scented, like the Primrose.

ERIA LONGISPICA, tab. 8,171.—This species from Borneo has been cultivated at Kew since 1898, and was presented by Messrs. LINDEN, of Brussels. It is described as of free growth, and as thriving in a mixture of peat and sphagnum-moss kept moist at all times, except for about eight weeks in midsummer, when it should be allowed to rest.

AGRICULTURAL RETURNS.—A leaflet containing a preliminary statement of the estimated yield of Potatoes, Turnips and Swedes, and Mangolds for the current year has just been issued by the Board of Agriculture. The estimated Potato crop for 1907 amounts to 2,977,910 tons, as compared with 3,428,711 tons last year, and the acreage under this crop has fallen from 565,921 last year to 548,920 for 1907. Thus the average yield per acre this year is 5.43 tons as against 6.06 tons last year, or, if the average of the last 10 years be taken, as against 5.75. It is thus seen that the yield this year is below the normal, as perhaps the poor season would have led one to expect. The average yield of Turnips and Mangolds, on the contrary, is larger this year than that for the last 10 years.

MIDLAND COUNTIES SWEET PEA SOCIETY.—We are informed that this society has been established with the object of encouraging the culture of the Sweet Pea in the Midland counties. A show will be held in one of the principal towns in the Midlands each year, the first to be held in Wolverhampton on July 29, 1908. For a long time, writes the secretary of the new society, it has been felt that an exhibition of this kind was wanted, the Midland grower having so few chances of exhibiting. The two chief floral exhibitions of the Midlands, namely, Wolverhampton and Shrewsbury, in an ordinary season, are too early and too late respectively, to catch Sweet Peas at their best, and the National Sweet Pea Society's show being held in London is too far for the average Midlander to take his Peas. The new society, which is affiliated to the National Society, has already nearly 100 members. At the first meeting of the society, it was resolved that the subscriptions be not less than 2s. 6d. per annum for members, and not less than 10s. 6d. per annum for vice-presidents. All subscribers are entitled to exhibit free in all classes at the show (at which the society offers over £30 in prizes, exclusive of seedmen's special prizes and the N.S.P.S.'s silver medal), also to have tickets of admission to the show to the value of their subscriptions. Any seedsmen or others wishing to give special prizes, or who require further information respecting the society, are invited to write to the honorary secretary, Mr. OWEN F. TROTT, 140, Waterloo Road, Wolverhampton. Schedules will be ready in January.

MICE AND VEGETATION.—Mice are well known for the depredations they commit on Peas and other garden seeds in places where they are abundant, and they are hardly less troublesome when they gain access to stored bulbs, &c. It has been suggested that they exhibit a preference for bulbs which are diseased or are of poor quality, but this view seems to rest rather on benevolent opinion than on good evidence. The results of an examination of the stomachs of field mice, as given by D. E. LANTZ in his *Economic Study of Field Mice*, show that the animals live on the most varied diet, and few things in the way of seeds, bulbs, fruits, &c., come amiss to them. It has been calculated that to maintain a thousand mice for one year about 12 tons of grass or other vegetation is required. It is readily seen therefore how desirable it is to keep their numbers well in check.

CARBON DIOXIDE AS A BACTERICIDE.—The effect of carbon dioxide, at high pressure, as a bactericide is well known, and to this fortunate property many of the consumers of soda water owe their immunity from typhoid and other bacterial diseases. Anyone who has observed, and has enquired into the causes of, the yellowish deposit sometimes to be seen in syphons of soda water, especially abroad, will readily appreciate the force of this statement. Carbon dioxide has been used also to prevent the curdling of milk, and experiments conducted at the New York Agricultural Station at Geneva, N.Y., are of interest in this connection. The milk, both fresh and pasteurised (i.e., sterilised), was charged with the gas at a pressure of 150 lbs. to the square inch. The milk was then run into ordinary syphons. The sterilised milk was found to be perfectly good for 40 weeks. Ordinary milk, when carbonated, will apparently keep good for several weeks. It seems likely that a commercial future lies before these experiments.

FUNGOID AND OTHER ENEMIES OF THE PARA RUBBER PLANT.—With the extension of the cultivation of Rubber plants over the world, and their introduction into countries far removed from their own habitats, it is singular to note that many of the introduced plants do not long remain before they are attacked by fungoid and insect enemies; thus it seems, according to the *Proceedings of the Agricultural and Horticultural Society of India*, that in Borneo and Perak the Para Rubber trees that have been introduced into plantations have suffered from fungoid attacks of the roots. The plants are mostly young ones, with stems about 2 inches through, and the roots were found, on the death of the plants, to be encrusted with a white mycelium. The effect of the attack has been to absolutely kill the trees within three weeks of the first appearance of the disease. The roots and the green wood rot, and the tree falls. The disease is described as attacking individual trees scattered over the plantations, and not as affecting groups. Both in Borneo and Perak the fungus has appeared on newly-planted ground. In both cases the disease is sporadic, and does not appear to have spread to other trees. It is said that doubtless the attacking fungus is one of the *Polyporeæ*, and may possibly be *Irpex flava*; but whatever the fungus may be, it is recommended that the soil be well limed where each tree has died, and to avoid planting any more Rubber trees on the same spot. The following further advice is also given:—"It might be a good thing in cases like this to plant a Banana plant or two on the infected ground. These *Polypori* cannot, of course, grow on Bananas, and the plants help to break up the decomposed and infected wood and roots beneath the soil. This has been tried in the Botanic Garden against *Fomes*. The ground infected was dug over, treated with lime and copper sulphate, and planted with Bananas, and the fungus in this patch seems to have quite disappeared. It is, however, the oldest bit of the infected area, and the fungus may have died out of itself. This fungus, whatever it is, should be carefully watched to see that it does not spread to the trees next to it." In the same number of the *Journal of the Agricultural and Horticultural Society of India*, from which the foregoing information is obtained, occurs two other notes affecting the enemies of Para Rubber plants, one, a fungus which attacks the leaves of young plants, but which apparently does but little harm to adult trees, and to which it was proposed to give the name of *Helminthosporium heveæ*, and the other, referring to crickets, which have been described as biting off the tips of Rubber seedlings, one species of which has been identified as *Brachytrypes achatina*. From these notes it would seem that the most valuable Rubber plant known is, unfortunately, not without its enemies when brought under cultivation.

ROYAL METEOROLOGICAL SOCIETY.—An ordinary meeting will be held at the Institution of Civil Engineers, Great George Street, Westminster, S.W., on Wednesday, December 18, at 7 30 p.m. The papers to be read will include one on "Indications of Approaching Frost," by Mr. RICHARD STRACHAN, F.R.Met.Soc.

EMIGRATION TO CANADA.—The Assistant Superintendent of Canadian Emigration has been officially advised by the Canadian Immigration Department at Ottawa, that the demand for labour of all kinds in Canada is over for the season, and all persons thinking of emigrating are strongly advised, if they are looking for employment in Canada, not to sail earlier than April next, and then only if they have employment assured, or are in a position to maintain themselves until they secure such employment.

A GARDENER'S LONG SERVICE.—Mr. SAMUEL CHAPMAN, gardener of Alderley Edge, has just completed 40 years' service with one family. His first office was as head gardener to the late Mr. J. ARTHUR RAILTON, of Whalley Range, Manchester, and he is serving in the same capacity to Mrs. J. ARTHUR RAILTON, Alderley Edge. Mr. CHAPMAN is well known as a skilful gardener.

SEED AND SOIL INOCULATION.

(Continued from page 386.)

THE satisfactory inoculation results obtained in America naturally attracted much attention in this country, and in 1905 our Board of Agriculture obtained the co-operation of 13 different agricultural colleges and experiment stations with a view of testing the cultures. The results of these experiments were far from satisfactory, and the official report states that "the negative results exceed the positive in number both in plot experiments and under agricultural conditions." Unfortunately, the Board of Agriculture did not continue the experiments with the view of ascertaining the causes of failure. The subject was dismissed with the statement "that in this country plant inoculation has not yet passed the experimental stage," and, in consequence, the idea has become widespread that inoculation is useless for the soils of this country. The causes of failure, however, are very evident in the light of recent experiments. In the first place, many of the cultures used were dead or in a highly-weakened condition. Secondly, there does not appear to have been sufficient care taken to apply the culture to suitable soils. Prof. Vines, of Oxford, showed some years ago that the presence of nitrates in the soil has an unfavourable effect upon the nitrogen-fixing bacteria, and prevents the development of root tubercles. He states: "The results of all these experiments agree in showing that the development of tubercles is much less when nitrate is present in the soil than when it is absent. It is also indicated that as the amount of nitrate diminishes the development of tubercles becomes more marked. In all cases in which tubercles made their appearance on the roots of plants which had been supplied with nitrate, they are exclusively developed on the youngest roots, especially on those near the surface of the soil; in that part, that is, which would naturally lose its nitrates most rapidly."

Even in the report issued by the Board of Agriculture we find that some excellent results were obtained when these two essential conditions were fulfilled. In Scotland an acre of inoculated Beans yielded 3,070 lbs. of grain, against 1,800 lbs. from an acre non-inoculated—a gain of 70 per cent. In Leicestershire, a half-acre plot of treated Peas yielded, when threshed, 108 stones; a half-acre plot untreated only 66 stones. At Woburn, treated Melilotus gave 23 per cent. heavier crop than when untreated. In the face of such results as these one cannot understand why the subject was abandoned.

Failing further experiments in official quarters, over a thousand packages of *living* culture material were distributed *free* from the Botanical Laboratory, King's College, London, during 1906 and 1907, to anyone who cared to test inoculation of seed and soil. The results obtained prove conclusively that inoculation is beneficial on most British soils under suitable conditions, for over 80 per cent. of the reports returned show an increase of crop from the use of the bacteria cultures.

At this point it will be well to utter a warning against any misconception or unjustifiable expectation regarding the use of bacterial cultures. Inoculation is not a panacea for all the ills of the soil. The cultures of nitrogen-fixing bacteria are not to be regarded in the light of nitrogenous manures, increasing the yield under any or all conditions. The cultures do not contain nitrogen. They simply add to the soil the bacteria which, under favourable conditions, form nodules on leguminous plants, and render available the nitrogen from the atmosphere for the growth of these plants. As already mentioned, rich soil containing plenty of available nitrogen checks the activities of the bacteria. It is poor soil which responds most readily and liberally to inoculation, and there are thousands of acres of non-productive land in this country which it does not pay at present to till and manure, but which could be rendered fertile and productive by the use of bacteria cultures.

What, then, are the conditions under which a farmer or gardener may expect to benefit by inoculation?

Inoculation is *necessary* when the land is poor or "thin," that is, low in organic matter; when it has not recently borne a leguminous crop; or when the roots of legumes grown are devoid of nodules.

Inoculation is *desirable* when a different leguminous crop from that previously grown on the land is being planted; or when the crop growing, though possessing root nodules, is not producing up to the average. The introduction into the soil of a more virulent race of bacteria may greatly increase the yield.

Inoculation will be a *failure*—

(1) When the soil is too acid and in need of lime. Liming to correct acidity is as necessary for the proper activity of the bacteria in the soil as for the growth of the plants.

(2) When the soil is deficient in phosphates and potash; these fertilising elements must be added if the bacteria are to perform their work properly.

(3) When the directions for preparing the culture solutions are not carefully followed.

(4) It must also be remembered that inoculation will not overcome results due to bad seed, improper preparation and cultivation of the ground, and adverse conditions of weather and climate.

Given suitable conditions, the advantages which may be expected from inoculation are four in number.

1.—**INCREASED YIELD OF CROP.**—The amount of increase will naturally vary according to differing conditions, and it is evident from what has been already said that the greatest increase may be expected on poor or worn-out soils.

2.—**INCREASE OF FERTILITY OF SOIL.**—It has already been pointed out that the nodules on the roots of leguminous plants are the centres of nitrogen fixation. In their tissues are stored up quantities of organic nitrogen greatly in excess of what is required by the plant. When the crop is harvested these nodules remain in the ground, and the nitrogen store of the soil is correspondingly increased. As inoculation increases the number of these nodules, it is readily seen how valuable inoculation is both for maintaining and increasing soil fertility.

A number of careful experiments have been made in the United States and Germany to estimate the approximate amount of organic nitrogen added to the soil by a well-grown leguminous crop. Averaging the results from 16 different States in America, the amount of nitro-

gen added per acre was 125 lbs. In Germany the estimate was 175 to 200 lbs. per acre. When it is considered that nitrate of soda only contains about 15 per cent. of nitrogen, it is seen that a crop of nodule-bearing legumes may add the equivalent of half a ton of nitrate of soda per acre, representing a cash value of £4 to £6. *W. B. Bottomley.*

(To be concluded.)

IMPORTATION OF GOOSEBERRY PLANTS.

THE following instructions have been issued by an order of the Board of Agriculture and Fisheries, dated November 29, 1907:—

AMERICAN GOOSEBERRY MILDEW (PROHIBITION OF IMPORTATION OF BUSHES) ORDER OF 1907.

The Board of Agriculture and Fisheries, by virtue and in exercise of the powers vested in them under the Destructive Insects and Pests Acts, 1877 and 1907, do order, and it is hereby ordered, as follows:

Prohibition of Importation of Gooseberry and Currant Bushes.

1.—(1.) The landing in Great Britain of any Gooseberry bush or Currant bush brought from any place out of Great Britain is strictly prohibited.

(2.) This Article shall not apply to the landing of any bush on or before the thirty-first day of January, nineteen hundred and eight, if a licence authorising such landing has previously been obtained from the Board of Agriculture and Fisheries, and is produced if so required by any officer of Customs when the bush is landed.

Penalty for dealing with bushes illegally Imported.

2. If any person without the written consent of the Board of Agriculture and Fisheries shall in Great Britain sell, or expose for sale, or plant any bush which has been landed in contravention of this Order, knowing the same to have been so landed, he shall be liable on conviction to a penalty not exceeding ten pounds.

Power of Entry by Inspectors.

3. An Inspector of the Board of Agriculture and Fisheries or of the Local Authority appointed under the Destructive Insects and Pests Acts, 1877 and 1907, may enter any premises on which he has reason to believe that there are bushes landed in contravention of this Order and examine any bush on such premises, and any person who wilfully obstructs or impedes any Inspector in the course of his duties under this Article shall be liable on conviction to a penalty not exceeding ten pounds.

Provision in case of discovery of Disease.

4. If on any examination under the preceding Article an Inspector finds any bush which is affected with American Gooseberry mildew (*Sphaerotheca mors-uvae*) he shall forthwith communicate the fact to the Board of Agriculture and Fisheries and serve on the occupier of the premises on which the bush is found a notice prohibiting, until the notice is withdrawn by a like notice, the removal of any Gooseberry or Currant bush from those premises, and any person who shall remove any bush in contravention of a notice under this Article shall be liable on conviction to a penalty not exceeding ten pounds.

Definitions.

5. By this Order—

"Bush" includes a cutting, stock, or seedling, and any part of a bush, except the fruit;

"Landing" includes introduction through the post.

Commencement.

6. This Order shall come into operation on the fourteenth day of December, nineteen hundred and seven.

Short Title.

7. This Order may be cited as the AMERICAN GOOSEBERRY MILDEW (PROHIBITION OF IMPORTATION OF BUSHES) ORDER OF 1907.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

COCKROACHES.—These insect pests of the same family—*Blattidæ*—as the crickets, grasshoppers, locusts, &c., are often found in glasshouses, the tropical species, *Periplaneta americana* and *P. australasica*, being imported on Orchids and other kinds of plants. In addition to their offensive odour and their feeding habits, which make these insects very objectionable, they attack starched articles of dress, such as collars and cuffs, and most gardeners are aware of the injury caused to Orchids by their nibbling of the growing points of the aerial roots. Cockroaches are not difficult to extirpate from houses. Boracic acid is poisonous to them, and any attractive food mixed with it may be used as a bait. A good mixture is made of equal parts boracic acid and Molasses or sweet chocolate. If this be placed in their haunts, it will be readily eaten by them. Ordinary borax, if scattered about in places infested by them, will drive them out. Naphthalene is also useful in this way. *F. M.*

SUITABLE VINES FOR INARCHING OTHER VARIETIES UPON.—I am well acquainted with the characteristics of all the leading varieties of the Grape vine cultivated under glass in Great Britain and Ireland during the last 35 or 40 years, and during half of that period of time (up to 1897) I was a more or less successful exhibitor at leading fruit shows in the South and West of England, the Crystal Palace, &c. I have often had occasion to inarch a new variety of Grape upon an established vine of a different description as a quick and convenient method of obtaining a fruiting rod of the "newcomer," and at other times inarching was resorted to in order to increase the number of fruiting rods of certain varieties. The operation was also practised with a view to improving the characteristics and qualities of certain varieties of the Grape vine by inarching them upon established rods of superior kinds, a union with which was calculated to effect the desired improvement. However, I may confess before proceeding further that, during my early experience in this direction, I practised the inarching of Grape vines more on account of its being a quicker and most convenient way of procuring a fruiting vine than with any other object in view. There can be no doubt that the influence which the stock exercises on the scion is considerable. So great, indeed, is this influence, that the character of a well-known Grape—to wit, Gros Maroc—was so much altered in size and shape of bunch and berry, as well as in flavour, by reason of its union with a worthless foreign variety that several expert Grape growers to whom I showed it failed to recognise it, while they readily recognised a bunch from the same vine inarched on a Black Hamburg stock, and placed in a bottle alongside it in the Grape room for comparison. This happened soon after the Gros Maroc Grape was introduced into commerce. Being anxious to obtain a second rod of it, and a second shoot being available on the same pot vine from which I had inarched one on the Black Hamburg close by, I accordingly inarched the second shoot on the worthless vine referred to, regardless of what the result of such a union would be. The vine in question was sent in mistake for a good variety, which an officer in command at Malta had ordered to be sent home to me. Being anxious to test the variety as soon as possible, I allowed the plant to ripen one poor bunch of fruit in the following year. Hence my utilising the stock without paying any regard whatever, I admit, to the advisability or otherwise of effecting such a union. However, I communicated my experience forthwith to the *Gardeners' Chronicle* for the benefit of its numerous readers, and so eased my conscience in the matter. Muscat of Alexandria is the best stock on which to graft or inarch any other white Grape. By such a union, the flavour of perhaps every other white (excepting Canon Hall Muscat) Grape will be improved. Black Hamburg and Madresfield Court Black Muscat will also produce a similar desirable change in the flavour of any late Black Grape (excepting Mrs. Pince's Black Muscat) inarched or grafted thereon. The said stocks (preferably the Black Hamburg)

would be quite safe to work Mrs. Pince on, and while not expecting the flavour of the latter to improve or suffer in any way, the colouring properties of the Grape, which is oftener "foxy" than black when ripe, might be improved by such a union. Gros Maroc Grape, besides being a large-berried variety, colours splendidly without being subjected to any special kind of treatment, and therefore might effect an improvement in this direction in the produce resulting from vines of Gros Colmar inarched on the Gros Maroc stock. Again, Muscat Hamburg engrafted on a Black Hamburg stock would probably result in more compact bunches, consisting of more even-sized and better-coloured berries of this fine-flavoured Grape, being obtained. The berries of Madresfield Court resulting from vines worked on the Black Hamburg stock colour better, and evince no disposition to "crack." I fail to see in what way the Muscat of Alexandria Grape referred to by Mr. Molyneux could have been improved in flavour by reason of the vine that bore the bunches mentioned being inarched on a vine of Foster's Seedling, seeing that in point of flavour the latter variety can only be looked upon as a third-rate Grape. *H. W. Ward.*

—Mr. Molyneux's remarks on p. 379 of the *Gardeners' Chronicle* brings to my mind a similar case which came under my notice about 12 years ago, when I was at Wentworth Castle under Mr. E. Batley. A Muscat of Alexandria vine had been inarched on a rod of Foster's Seedling with excellent results. The bunches were more compact than is the case when this Muscat is cultivated on its own roots, the berries were rounder, better finished than usual, and altogether much improved. *Jas. Murray, S. Lucy.*

—I quite agree with Mr. Molyneux (see p. 379) respecting the inarching of one vine upon another variety. My experience has been chiefly with the variety named Appley Towers, inarched upon Lady Downes, also West St. Peter; it has made remarkable growth, and has borne excellent fruit the second season, finishing well and keeping in good condition up to this date, December 3. This excellent variety is not so widely known as it deserves to be; it is worthy of a place in a viney containing various sorts, and in a large establishment a whole viney filled with it would be valuable as providing a good succession to Black Hamburg. The foliage of Appley Towers is very ornamental, being equal if not superior in this respect, to Lady Downes. *G. Harvey, Stanton Hall, Bakewell.*

GROVE HALL PARK, BOW.—Please grant us space to appeal to your readers for their help in securing Grove Hall Park for the people, and especially for the children, of Bow. By the generous assistance of the London County Council (who are contributing £4,500, being one-half the total cost, besides bearing the cost of laying out and of future maintenance) and of the Poplar Borough Council (who are contributing £2,250, one-fourth the total cost) $3\frac{1}{2}$ acres of the Grove Hall Estate, the very last open space in the neighbourhood, have been secured, and this committee has undertaken to raise, by subscriptions, the remaining one-fourth—£2,250. Of this amount £1,000 has now been given by local manufacturers, residents, and friends, and the balance must be found at once. The scheme has the warm approval of the Bishop of London and the Bishop of Stepney, both of whom, in kindly forwarding contributions, have expressed the hope that the money may be quickly forthcoming. The Metropolitan Public Gardens Association heartily supports the movement and has contributed £50. All who know the neighbourhood will recognise the urgent need of this little park for the people and playground for the children. There is no time to be lost, and we earnestly ask for a prompt and generous response to our appeal. Donations may be paid to the London and South-Western Bank, Ltd., Bow, E., the London and Westminster Bank, Ltd., Bow, E., or to Henry J. Kitcat (Rector of Bow and Chairman of Committee), Henry A. Mason (Vicar of St. Stephen's, Bow, Rural Dean of Poplar), Gilbert Bartholomew (Fairfield Works, Bow, E., Vice-Chairman of Committee), and Thos. Alex. Cook (Soap Works, Bow, E., Hon. Secretary of Committee), who will gladly furnish any further information or supply list of subscriptions to date. *Thos. Alex. Cook.*

BLACK SCAB IN POTATOS.—I have carefully read through Mr. Salmon's admirable, ill-strated article on this form of Potato disease published in the last issue, but beyond his strong recommendation that steps be taken to induce the Government to legislate for the suppression of the disease by preventing the sale or transit of diseased tubers, no other remedy seems to be presented. As this is a fungoid disease, which may be propagated by diseased Potatoes or by fungus-affected soil, why should not a liberal application of lime, and especially gas lime, so excellent a remedy for other root-diseases, be given to the soil which is bearing the affected crop, and also to the soil to be planted with Potatoes in the succeeding season? Naturally, it is remedies that can be immediately applied that are required by growers who may suffer from this Black Scab disease, whilst any benefit resulting from legislation may be indefinite. I had a bad sample of the Black Scab sent me two years ago. I advised the lifting and destroying of all the diseased tubers at once, followed by an immediate dressing of the ground with a bushel per rod of gas lime a heavy dressing, but the case needed drastic action. I have had no more complaints since that time, and in all my experience with Potatoes I have never seen any similarly-diseased tubers. However, there is no getting away from the evidences of the spread of this fell disease which Mr. Salmon quotes, and that fact makes it all the more needful that some suggestions as to remedies that can be applied at once be made. We want in relation to these things not ironical compliments between scientists, but really practical suggestions as to remedies or cures. However, I trust no one will be in any way frightened. The proportion of sound Potatoes here to-day is about 10,000 to 1 of tubers affected by Black Scab. *A. Dean.*

SEED AND SOIL INOCULATION.—Although Professor Bottomley has yet more to say on this very interesting subject, I trust that next year good tests of the merits of soil inoculation, as also of seeds, will be conducted under Mr. Chittenden's control at Wisley. There certainly can be found at Wisley poor, sandy soil for the purpose. I have seen one trial this year of the inoculation of the seeds of Peas, Long Pod and Runner Beans in that district, comparison being instituted between rows so treated without manure and other rows not inoculated, but with manure. Generally, the manured rows gave the best growth, but as the ground had been cultivated and cropped for some years, and the summer was an abnormal one, it was difficult to determine how far inoculation of the seeds had proved to be a success or otherwise. On some of the poor sands at Wisley the test should be applied to Peas solely at first, with rows ordinarily manured, others seed-inoculated only, others without manure or inoculation, and include at least six varieties. Such a test, no doubt a severe one, would be of great interest both for practical and scientific men. *A. D.*

ROMNEYA COULTERI.—On p. 390 of the last issue Mr. E. Molyneux wrote of the value of this fine plant, and, incidentally, of the difficulty of defining whether or not it should be exhibited as "an herbaceous subject." True herbaceous plants, whether "stove," "greenhouse," or "hardy," have nothing more than "annual" stems, which perish after they have flowered. Thus it is clear that no plant having persistent stems maturing "eyes" or "buds" which are capable of flowering a second year can be regarded as herbaceous. The *Romneya* has, therefore, no more claim to be classed in a competitive group of "herbaceous plants" than has the "tree" *Pæony*, *P. Moutan*, while *P. albiflora* and others are strictly "herbaceous." Many years ago the Royal Botanic Society of London arranged classes in their exhibition schedule for "stove" herbaceous and "hardy" herbaceous species. It mattered not whether the plant exhibited was a diminutive Alpine, a bulbous, or tuberous-rooted subject, or what not, so long as its flower-stems were not persistent and capable of a second-year's growth. If compilers of schedules, judges, and flower show committees would bear this in mind, any difficulty in determining the point would be minimised. The *Romneya* generally, so far as my experience goes, retains its deciduous, shrubby character in this country,

north, south, or west; but the point I would like to emphasise is this: that, as a deciduous shrub pure and simple, breaking afresh and flowering from the old wood each year, this handsome subject does itself bare justice. If gardeners generally would but cut the plant to a point near the ground each year, compelling it to break into growth near the base, and treat the plant liberally in regard to soil-cultivation, they would soon find how much better and finer it would flower. Mr. Molyneux shows that he has to some extent realised the value of this annual cutting down of the plant, when he advises "liquid manure for inducing vigorous growths to push from the base of the plant; such shoots as these producing the finest flowers." If these fine flowers are possible with a plant already carrying numerous shoots above, how much better should the flowering prove where a systematic pruning is carried out year by year? In gardens in Sussex, the Isle of Wight, and other places, this annual cutting down has been practised for years past. This vigorous mulching of decayed manure should be afforded the roots each year. In northern gardens the species should be given the warmest position available, while in the more southern districts it may be planted in any position that has ordinary shelter from the north and east. *E. H. Jenkins, Hampton Hill.*

EUCALYPTUS FICIFOLIA.—I read with interest the note on this plant (p. 376). I have never seen a tree of this species growing in England, but have often thought that were it better known it would become popular. As a foliage plant it is equal to the best of the other species of *Eucalyptus* in cultivation, but, in addition, it is one of the most gorgeous of flowering plants. A tree usually flowers for the first time when from 7 to 10 years old. The habit is not tall when compared to many of the other species, an adult plant being from 12 to 18 feet high, very bushy and shapely. I have seen several seedling forms which have for the most part flowers of a lighter hue, some even approaching to a cream colour. *Harry Rabjohn, Welbeck Abbey, Worksop.* [We were wrongly informed as to the tree flowering out-of-doors, and are glad to correct the error. Mr. North-Row states that the specimen is planted out, but in the border of a cool greenhouse. It could not be induced to flower whilst growing in a pot.—Ed.]

SOCIETIES.

ROYAL HORTICULTURAL.

DECEMBER 10.—The meeting on Tuesday last was smaller than usual, but some pretty exhibits were seen, including several good displays of Carnations. Exhibits of fruit were rather more numerous than usual. Novelties were forthcoming in all the sections. The ORCHID COMMITTEE recommended one First-Class Certificate, one Botanical Certificate, and five Awards of Merit: the FLORAL COMMITTEE conferred an Award of Merit on *Montanoa bipinnatifida*; and the FRUIT AND VEGETABLE COMMITTEE gave a similar award to a new Pear.

At the three o'clock meeting of the Fellows a lecture on "Fungous Diseases of Plants" was delivered by Mr. E. S. Salmon.

Floral Committee.

Present: H. B. May, Esq. (in the chair), and Messrs. C. T. Druey, Geo. Nicholson, Jno. Green, Jas. Walker, G. Reuthe, J. F. McLeod, W. Howe, C. Blick, J. Jennings, W. Bain, C. Dixon, R. W. Wallace, H. J. Cutbush, C. E. Pearson, C. E. Shea, Jas. Douglas, W. Cuthbertson, W. P. Thomson, H. J. Jones, and E. H. Jenkins.

A choice exhibit of Carnations was shown by CECIL F. RAPHAEL, Esq., Porters Park, Shenley, Herts. (gr. Mr. A. Grubb). They were shown as pot plants, and although not excessively flowered, they were noteworthy on account of the season of exhibiting them. A batch of the scarlet *Britannia* occupied the centre of the exhibit, which also included many of the *Souvenir de la Malmaison* type of the variety *Princess of Wales*. (Silver-Gilt Banksian Medal.)

An exhibit of paintings of floral subjects was displayed by Mrs. E. LUGARD, 51, Prince of Wales Mansions, Batte a Park, London, S.W. The pictures were faithful representations

of Orchids and many South African flowers, the floral details being especially well reproduced. (Silver-Gilt Flora Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, displayed vases of Zonal Pelargoniums of exceptional size and quality. They made a bright show of colouring, and included most of the best varieties of this popular subject. The latest novelties included *Lucania* (cerise and orange), *Lusitania* (magenta), and *Arabic* (scarlet). (Silver Flora Medal.)

Messrs. H. B. MAY & SONS, Upper Edmonton, London, N., staged a pretty exhibit of Begonias, *Euphorbia jacquiniæflora*, and *Euphorbia* (*Poinsettia*) *pulcherrima*. Each subject formed a semi-circle, the central and largest one of *E. jacquiniæflora* being separated from those on either side by a row of *Nephrolepis* and other Ferns. The Begonias were of the variety Mrs. L. de Rothschild. (Silver Flora Medal.)

Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, again staged an exhibit of Begonias of the semi-tuberous varieties, also *Jacobinias*, *Leonotis Leonurus*, and *Exacum macranthum*. The fragrant, pink-coloured *Luculia gratissima* was also shown in a batch of plants finely flowered, the whole group being relieved with Ferns and Palms. (Silver-Gilt Banksian Medal.)

Messrs. W. CUTBUSH & SON, Highgate, London, N., staged a very large number of dwarf plants of *Citrus Aurantium*, of the variety known as *Otaheite Orange*. Interspersed in the group were berried plants—*Skimmia japonica*, *Ardisia primulæfolia*, *Pernettya mucronata*, &c., with *Daphne japonica*, *Ophiopogon Jaburan*, Ferns, Palms, &c. (Silver Banksian Medal.)

Messrs. HUGH LOW & CO., Royal Nurseries, Bush Hill Park, Enfield, staged a very fine exhibit of Carnations of the winter-flowering type. The collection embraced most of the best of the American raised varieties, including Mrs. Lawson, *Enchantress*, *Harlowarden*, *Perfection*, and its white variety—the last-named being remarkably fine—&c. There were also many new sorts, the best of which was labelled *Aristocrat*. The colour of this variety is a cerise-pink, and the flower has commendable form. Other new kinds were *Winsor* (rose-pink), *Mauvina* (mauve), and *Beacon* (scarlet). Adjoining the Carnations was a batch of *Euphorbia jacquiniæflora*, and on an adjoining table pans of *Cyclamen*—*Low's Salmon*. (Silver Flora Medal.)

H. J. KING, Esq., Eastwell Park, Ashford, Kent (gr. Mr. J. G. Weston), showed vases of Carnations relieved with Grasses, *Asparagus Sprengeri*, Fern-fronds, &c. (Silver Banksian Medal.)

Messrs. W. BULL & SONS, King's Road, Chelsea, exhibited a number of ornamental-leaved plants of exotic species as a setting to their exhibit of Orchids. (Silver Banksian Medal.)

Messrs. W. WELLS & CO., Merstham, Surrey, showed single, thread-petalled and other *Chrysanthemums*.

AWARD OF MERIT.

Montanoa bipinnatifida.—This is a Mexican species of the natural order Compositæ, and has large and handsome bipinnate leaves that have caused the plant to be used in this country for sub-tropical gardening in summer. In the *Gardeners' Chronicle* for February 24, 1906, p. 123, there was published an illustration depicting the species in flower in the sunny climate of Bordighera. Until Tuesday last we do not remember to have seen *M. bipinnatifida* in flower in this country. Messrs. Paul & Son, Cheshunt, exhibited on the occasion mentioned a group of plants in pots, the specimens varying from 2 feet to 5 feet in height. One of the plants then shown was photographed, and is now reproduced at fig. 172. The illustration, whilst affording an excellent picture of the flowers, fails to show the ornamental leaves. The ray florets were pure white on Messrs. Paul's specimen, but this species has usually been described as yellow. The inflorescences in some cases bore 23 flowers, each having a diameter of 3 inches. Cultivators may be recommended to give the species a trial as a pot plant for flowering in large, moderately heated conservatories.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the Chair); and Messrs. Jas. O'Brien (hon. sec.),

Harry J. Veitch, De B. Crawshaw, W. Cobb, W. Bolton, F. M. Ogilvie, H. Little, W. P. Bound, J. Charlesworth, A. A. McBean, A. Dye, F. J. Hanbury, W. H. Young, H. G. Alexander, T. W. Bond, H. A. Tracy, H. Ballantine, F. J. Thorne, W. H. White, I. W. Potter, C. J. Lucas, G. F. Moore, and W. A. Bilney.

G. F. MOORE, Esq., Chardwar, Bourton-on-the-Water (gr. Mr. Page), staged a magnificent group, extending the entire width of the hall and including some 500 splendidly-grown and finely-flowered specimens, many of them with a large number of flowers. The *Cypripediums*, for which the Chardwar collection is noted, made the body of the group. These were broken up at intervals by graceful arrangements of the yellow *Oncidium varicosum*, the rose and white *Dendrobium Phalaenopsis Schröderianum*, and the bright-red *Epidendrum O'Brienianum*, the whole being very skillfully arranged with Palms, Crotons, &c., and carpeted with green moss, so that none of the pots were visible. About 150 distinct varieties of *Cypripedium* insigne were in the group, the centre of which was filled with all the best yellow varieties of that species. One specimen of *C. insigne* *Harefield* 1111 bore 12 flowers and eight seed capsules; *C. i.* *Commander-in-Chief*, *C. i.* *Bohnhoffianum*, *C. i.* *Agatha*, and the charming *C. i.* *majesticum* were noted as specially fine; among the many varieties of *C. Leeanum*, *C. L.* *Coronet* was remarkable for the fine shape of its white dorsal sepal, which, in a great degree, resembles that of the unique *C. L. J.* *Gurney Fowler*. *C. Blanche Moore* was a very handsome and finely-formed variety; the forms of *C. Actæus* were many and good; *C. Miss Louisa Fowler magnificum*, a very attractively-coloured bloom; *C. concolor*, *C. Memoria Moensii*, and *C. triumphans*, *C. Maudiae*, and most of the best *Cypripediums* of the season were well represented. The Society's Gold Medal was awarded for the group.

Major G. L. HOLFORD, C.V.O., C.I.E., West-birt (gr. Mr. H. G. Alexander), showed *Cypripedium* *Earl of Tankerville* (exul × nitens *Sanders* variety); the pretty rose-tinted *Cattleya* *Cyril* (*Harrisoniana* × *Percivaliana*) and three fine novelties. (See Awards.)

Messrs. CYPHER & SONS, Cheltenham, were awarded a Silver Flora Medal for a bright and effectively-arranged group, the centre of which was made up of good *Odontoglossum crispum*, *Lælia anceps Amesiana* and *Schröderæ*, *Calanthe Veitchii*, and other *Calanthes*; *Oncidium ornithorhynchum*, *Dendrobium Phalaenopsis Schröderianum*, and the rich purplish-crimson *D. Statterianum*. On each side were fine selections of *Cypripedium* *insigne* in great variety, *C. Leeanum*, *C. Euryades*, *C. Maudiae*, and other good hybrids; some bright *Masdevallias*, &c.

F. DU CANE GODMAN, Esq., South Lodge, Horsham (gr. Mr. Moody), was awarded a Silver Flora Medal for an excellent group, the centre of which was brightened with many sprays of the bright rose-pink *Calanthe Veitchii*, the white and crimson *C. vestita*, and other *Calanthes* arranged round a good specimen of the singular *Angræcum sesquipedale*. At the ends of the group good *Lælia anceps*, *Vanda cœrulea*, some excellent *Cypripediums*, the pretty little yellow *Oncidium cheiroporum*, the rose-coloured *O. ornithorhynchum*, &c., were arranged.

Messrs. CHARLESWORTH & CO., Heaton, Bradford, secured a Silver Banksian Medal for an interesting group, in which were an unusual number of rare species. Among them were a superb form of *Oncidium bicallosum*, with large wax-like flowers, the sepals and petals tinged with chestnut brown, and the huge labellum clear yellow; the curious dwarf *Zygopetalum Murrayanum*, with apple-green sepals and petals and white lip with red lines at the base; the elegant white *Ionopsis paniculata*, *Platyclinis Cobbiana*, with many graceful spikes, *Cœlogyne sulphurea*, some fine plants of the handsome *Trichopilia suavis*, *Gomesa planifolia*, several *Bulbophyllums*, including the whitish form of the African *B. flavidum*, known as *B. Drallei*; several *Lycastes*, &c., and among hybrids the rare *Cynorchis Kewensis*.

Messrs. HUGH LOW & CO. were awarded a Silver Banksian Medal for a group in which were some fine forms of *Odontoglossum crispum*, including the handsomely-blotched *O. c.* *Lindenii*

and *O. c. Cooksonii*. Others noted were *Cypripedium* Mrs. Tautz, *C. insigne* bisepalum, good; *C. niveum*, *Oncidium ornithorhynchum* album, *Dendrobium* Goldiei, *Spathoglottis* Lobbii, *Cymbidium* Tracyanum, *Gongora* quinquenervis and *Lælio-Cattleya* luminosa.

Messrs. ARMSTRONG & BROWN, Tunbridge Wells, were awarded a Silver Banksian Medal for a group of excellent *Cypripediums*, the best of which was *C. Armstrongiæ* (nitens *G. S. Ball's* variety \times *Charlesworthii*), a charming soft-tinted flower, showing much of *C. Charlesworthii*, but improved in size and shape. The large white dorsal sepal was suffused with pale rose, having a bronzy shade at the base, the petals and lip being yellow, tinged with purple.

E. ROBERTS, Esq., Park Lodge, Eltham (gr. Mr. Carr), showed *Cypripedium* Lorna (*Leeanum* *Clinkaberryanum* \times *villosum*), and *C. Charlesianum* superbum, both good flowers.

Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate (gr. Mr. W. P. Bound), showed *Cirrhopetalum* refractum with three spikes; the pink-coloured *Phaio-Calanthe* *Colmanii* rosea and another. (See Awards.)

DREWETT O. DREWETT, Esq., Riding Mill-on-Tyne (gr. Mr. Renwick), showed a select group of *Cypripediums*, among which were several improvements on *C. insigne* *Chantini* raised by Mr. DREWETT. Also *C. Actæus* superbum, which had previously secured an Award of

Messrs. HEATH & SON, Cheltenham, showed *Cypripediums*, the best of which was the very fine *C. insigne* *Kathleen* Corser.

Monsieur MERTENS, Mont St. Amand, Ghent, showed some fine hybrid *Odontoglossums*.

F. MENTEITH OGILVIE, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), showed a good *Cypripedium* *Clio*, and another hybrid resembling *C. insigne*.

H. J. BROMILOW, Esq., Rann Lea, Rainhill, Lancashire (gr. Mr. Morgan), sent *Cypripedium* *Gaston* Bultel var. *King Edward*, with a bright rose-purple tint on the dorsal sepal; *C. Olive*, *C. Actæus*, Rann Lea variety, *C. Fulshawense*, and *C. Fairrieianum*, Rann Lea variety, a very fine form, with unusually large dorsal sepal.



FIG. 172.—MONTANOA BIPINNATIFIDA AS EXHIBITED BY MESSRS. PAUL AND SONS AT THE F.L.S. MEETING ON TUESDAY LAST: FLOWERS WHITE.

The parents of this fine hybrid were also shown, together with a selection of other *Cypripediums*.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), sent *Cypripedium* *Thalia* giganteum; the new and pretty *Lælio-Cattleya* *Minnie* (*Exoniensis* \times *aurea*), and *Cypripedium* *insigne* "Francis Wellesley," about which opinions were divided as to whether it was an abnormally fine *C. insigne* *Harefield* Hall, or a distinct and better variety of the same class. As it is from a different importation, the latter is the more probable.

Merit; *C. A. Purity*, *C. insigne* *Monkholme*, and *C. i. Monarch*.

H. W. PERRY, Esq., Hillthorp, Upper Norwood (gr. Mr. Buckingham), staged a nice group of well-grown plants, which included varieties of *Cypripedium* *insigne* and *C. Leeanum*, one of the prettiest of the latter being the Hillthorp variety; good *Lælia* *anceps*, *Lycaste* *Skinneri*, *Oncidium* *tigrinum*, &c.

Messrs. EDGAR & CO., South Woodford, sent a selection of varieties of *Cypripedium* *insigne*, and several hybrids.

H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. Day), sent four good hybrid *Cypripediums*.

AWARDS.

FIRST-CLASS CERTIFICATE.

Sophro-Cattleya *eximia*, *Fowler's* variety (*S. grandiflora* \times *C. Buxerlingiana*), from J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis).—The perfection of a dwarf and compact-growing Orchid, with large and brilliantly-coloured flowers. The scape bore two flowers; all the segments were broad, the sepals

and petals of a glowing mauve-crimson, changing in hue with varying light. Lip yellow at the base, lined with red, front ruby-red.

AWARD OF MERIT.

Lalia-Cattleya Berthe Fournier var. *tigrina*, from Major G. L. HOLFORD, C.V.O., C.I.E. (gr. Mr. H. G. Alexander).—A novel addition to the fine Westonbirt hybrids raised between L.-C. elegans and C. Dowiana aurea. The flower had sepals and petals of the colour of old gold, delicately flushed with reddish-rose. The lip was carmine crimson, with gold lines at the base.

Brasso-Cattleya Siren (B. Digbyana x C. Skinner), from Major G. L. HOLFORD.—A charming hybrid, with the growth resembling Cattleya Skinneri, and with flowers of good size and shape, bright rose, with white base to the fringed lip, and white column.

Cypripedium Beryl (Mrs. Mostyn x Beckmanni), from Major G. L. HOLFORD.—A handsome flower, nearest to C. Beckmanni, and of very fine substance. The flower, which has a glossy surface, had the dorsal sepal emerald green, heavily blotched with blackish purple, the margin being white. The broad petals and lip were pale greenish yellow, tinged and marked with mahogany red.

Cypripedium Fairreanum Black Prince, from Messrs. SANDER & SONS, St. Albans.—A great many varieties of this beautiful Cypripedium have bloomed in gardens out of the recent importations, but none have approached this form in beauty and in the extraordinary colouring of its dorsal sepal, the greater part of whose surface is taken up by the broad bands of dark purplish crimson which follow the veining, only a small proportion of the clear white ground colour appearing through the dark network. The rest of the flower is also finely formed and unusually dark in colour.

Cypripedium insigne Gwynedd (insigne Wallacei x insigne var.), from DREWETT O. DREWETT, Esq. (gr. Mr. Renwick).—A remarkable variety, with fine dorsal sepal, spotted with purple and rose, as in some of the lighter forms of C. Fendleri.

BOTANICAL CERTIFICATE.

Cirrhopetalum retusiusculum, from Sir JEREMIAH COLMAN, Bart. (gr. Mr. Bound).—A very pretty species, with elegant, one-sided heads of yellow flowers, spotted and tinged with red.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq. (chairman), and Messrs. W. Bates, George Woodward, Alex. Dean, Geo. Kelf, W. Pope, W. Fyfe, A. R. Allan, H. Parr, H. Markham, Ed. Beckett, Thos. Coomber, Jos. Davis, Jno. Lyne, Geo. Reynolds, Owen Thomas, P. D. Tuckett, J. Jaques, J. McIndoe, W. Poupert, and A. H. Pearson.

A meritorious exhibit of Apples and Pears was shown from the gardens of Viscount ENFIELD, Wrotham Park, Barnet (gr. Mr. H. Markham). A few bunches of Grapes were arranged in the centre, and these included Muscat of Alexandria, Black Alicante, and Appley Towers. The Apples and Pears were of choice quality, notable dishes being those of (Apples) The Queen, Allington Pippin, Baumann's Red Winter Reinette, Cox's Orange Pippin, Bramley's Seedling, Harvey's Wiltshire Defiance, Round Winter Nonsuch, and (Pears) Glou Morceau, Soldat Laboureur, Nouvelle Fulvie, and Josephine de Malines. (Silver Knightian Medal.)

Five excellent Pineapples of the varieties Charlotte Rothschild and Smooth Cayenne were displayed by Lord LLANGATTOCK, The Hendre, Monmouth (gr. Mr. Thos. Coomber). In these days when the culture of the Pineapple has largely diminished, it was pleasing to see such superb examples of this luscious fruit. (Silver-Gilt Knightian Medal.)

Sir WEETMAN PEARSON, Bart., M.P., Paddockhurst, Sussex (gr. Mr. A. B. Wadds), exhibited a box of Lye's Early Gem Tomato. The bunches of fruits were shown complete in order to demonstrate the excellent cropping qualities of this variety in the winter. Some of the clusters had nine large fruits.

An interesting exhibit of Grapes was shown from the gardens of the Earl of HARRINGTON, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre). The exhibit included five different types of the variety Muscat of Alexandria, all from the same vineyard.

The largest bunches were those labelled Bowood type, but these were not the finest in colour. Those of the Glamis type were the richest in colouring; those labelled Elvaston type were long, narrow bunches. The Tynningham and the Charleville types were both heavily "shouldered" bunches. Other Grapes shown by this celebrated cultivator included Gros Colmar; one bunch, although lacking somewhat in colour, was in all other respects a very fine example. (Silver Knightian Medal.)

Messrs. GEO. MASSEY & SONS, Spalding, filled a long table with varieties of Potatoes. Displayed in neat baskets, the well-washed tubers, clear of skin and uniform in size, attracted considerable attention. The collection embraced 85 distinct varieties. (Silver Banksian Medal.)

Messrs. SUTTON & SONS, Reading, showed a variety of Brussels Sprouts, having a large terminal head, in one instance resembling a Savoy and the other an ordinary Cabbage. The stalk was short and bore a number of coarse Sprouts.

AWARD OF MERIT.

Pear Beurri Naghan.—This is a large variety, having a smooth, yellowish-green skin, suggestive of Glou Morceau. It is, however, larger and more irregular in outline than that variety, and the stalk is set obliquely, with an outgrowth on one side. The flesh is white, melting, and has an agreeable flavour, being slightly aromatic. The fruits when ripe are remarkably juicy, with an entire absence of grittiness. The largest fruits weighed about half-a-pound. Shown by Messrs. J. CHEAL & SONS, Crawley.

WINTER-FLOWERING CARNATION.

DECEMBER 11.—The third show of this society was held in the gardens of the Royal Botanic Society, Regent's Park, on the foregoing date. As may be noted from a perusal of the balance-sheet and the list of members, the society, considering the short period of time that it has been in existence, has prospered considerably, but at present the society's sphere of usefulness is somewhat hindered owing to lack of funds.

OPEN CLASSES.

In the class for a collection of cut blooms of Carnations occupying a table measuring 10 feet by 4 feet, Mr. W. H. PAGE, Tangley Nurseries, Hampton, was awarded the 1st prize for fresh-looking flowers shown in large bunches, loosely arranged in glass vases ranging from 10 inches and upwards in height. Most of the varieties were of American origin, and the flowers were large in size, being borne singly on tall, stiff stems, some of them sufficiently strong as to need no other support. The exhibits were pleasingly assorted as regarded the colours. We remarked very fine blooms of White Perfection, Mrs. T. W. Lawson, My Maryland (a white flower of much substance), Lady Bountiful (pure white, whereas the previously named variety has occasional crimson-striped petals), White Enchantress, and the rose-pink variety of that name, Harlowarden, Winsor (a bright rose-pink variety), Jessica (a crimson-flaked flower), Governor Roosevelt (of the same shade of colour as Harlowarden, but a flower of larger size); Helen Gould (a massive, many-petalled bloom, large, and of a soft pink shade); and the white form of Mrs. Lawson. The 2nd prize was taken by Mr. S. MORTIMER, Swiss Nursery, Farnham, Surrey, with a smaller group of blooms, of which the finer were White Perfection, Fair Maid, Nelson Fisher (a rich pinkish crimson), Victory (a smooth-edged scarlet-coloured bloom of good build), The Belle (a loosely-formed white flower, with vigorous, self-supporting stalks); Harry Fenn, The Cardinal, and Mrs. M. A. Patten (crimson flake on a white ground).

COLOUR CLASSES.

The following 13 classes were for a specified number of blooms of one or nearly allied colours only. In each instance there was a larger class for 36 blooms, and a corresponding smaller class for 18 blooms.

White.—The first was that for 36 blooms of a white variety, and here the 1st prize was won by Mr. W. H. LANCASHIRE, Guernsey, for very fine flowers of White Perfection; 2nd, Mr. G. LANGE, Hampton, with White Perfection; 3rd, Mr. W. H. PAGE, Tangley Nurseries, Hampton.

In the class for 18 blooms, the 1st prize went to Messrs. BELL & SHELDON, Guernsey, for

Lady Bountiful; 2nd, Mr. H. MATHIAS, Medstead, for White Enchantress; 3rd, Mr. S. MORTIMER, for My Maryland.

Blush (thirty-six blooms).—The 1st prize was won by Mr. H. SMITH, Enfield Highway; 2nd, Mr. W. H. PAGE; 3rd, Mr. W. H. LANCASHIRE. This competition took place between blooms of Enchantress, high colour being markedly present in the flowers shown by the winner of the 1st prize.

For 18 blush varieties there were five competitors, all of whom showed one variety—Enchantress, the best being those from Messrs. BELL & SHELDON; 2nd, Mr. S. MORTIMER; 3rd, Mr. H. MATHIAS.

Salmon or light pink (thirty-six blooms).—The best were shown by Mr. A. F. DUTTON, Iwer, Bucks, in blooms of the variety Winsor; 2nd, Mr. A. SMITH, Enfield Highway; 3rd, Mr. H. BURNETT, with the variety named after Mrs. H. Burnett.

For 18 pink or salmon-coloured varieties—1st, Messrs. BELL & SHELDON, with Winsor; 2nd, Mr. H. MATHIAS, with rose-pink Enchantress.

Deep pink or rose (thirty-six blooms).—Mr. W. H. PAGE was placed 1st with the variety Mrs. T. W. Lawson, of which he showed perfect blooms; 2nd, Mr. W. H. LANCASHIRE.

For 18 blooms, one exhibitor took the 1st prize with Aristocrat, a smooth-edged, neat bloom.

Crimson (thirty-six blooms).—In this competition, Mr. DUTTON was 1st with Harlowarden, Mr. W. H. PAGE taking the 2nd prize with Governor Roosevelt; 3rd, Mr. W. H. LANCASHIRE.

Scarlet (thirty-six blooms).—In this class there were but two competitors, viz., Mr. A. SMITH, Enfield Highway, who secured the 1st prize, and Mr. W. H. LANCASHIRE, who was awarded the 2nd prize.

In the smaller classes for crimson, scarlet, and fancy flowers there were few exhibitors, and the only blooms were the scarlet Britannia, Robert Craig, and Flamingo; and Mr. MATHIAS's Helen Gould in the fancy class.

Any other colour (thirty-six blooms).—This was a poorly filled class. The 1st prize fell to Mr. A. F. DUTTON for the showy variety Imperial; 2nd, Mr. BURNETT.

The special prize given by Mr. H. Burnett for 12 blooms of Mrs. H. Burnett was taken by Mr. W. H. LANCASHIRE; and that for Britannia, given by Mr. A. Smith, Enfield Highway, was won by Messrs. BELL & SHELDON.

A vase of Carnations arranged for decorative effect.—The 1st prize in this class was awarded to Sir RANDOLPH BAKER, Blandford (gr. A. E. Usher), for a tall, columnar glass vase having pink Carnations and Asparagus sprays. The 2nd prize was awarded to Mr. W. H. LANCASHIRE for a vase containing Robert Craig and White Perfection, a vivid contrast of scarlet and white. Exhibits of sprays and buttonhole bouquets were few, and presented no new features.

AMATEURS' AND GENTLEMEN'S GARDENERS' CLASSES.

For the best collection of blooms of Carnations arranged on a table 8 x 4 feet.—The 1st prize was won by Mr. A. E. USHER (gr. Mr. Blandford), whose flowers were of a moderate degree of merit; 2nd, Mr. J. G. WESTON, Eastwell Park Gardens, Ashford, with dwarf glasses filled sparsely with Carnations and sprays of Asparagus plumosus.

The three-bloom classes of white, blush, salmon, crimson, scarlet, and fancy varieties found a few competitors in each.

CERTIFICATED FLOWERS.

Rose-pink Enchantress.—A large bloom, rich in its tint, and well formed. Its growth is vigorous, the bloom stalk carrying the heavy bloom erect.

Beacon.—A variety of bright scarlet colour, and of American origin. Both these new varieties were shown by Messrs. HUGH LOW & CO.

MISCELLANEOUS EXHIBITS.

The large Gold Medal of the Royal Botanic Society was awarded to Mr. H. BURNETT for an extensive exhibit of Carnations, in which most of the finer varieties were noted, and some seedlings, including yellow ground, flakes, some pleasing fancies, and selfs.

Mr. J. LANGE, nurseryman, Hampton, showed a similar collection of varieties, more abundantly than the foregoing grower, and was awarded a Silver Gilt Medal of the Royal Botanic Society.

Messrs. BELL & SHELDON, of the Castel Nurseries, Guernsey, exhibited largely Carnations in vases, most of the finer varieties being represented, and the firm received the Royal Botanic Society's Gold Medal.

Messrs. JOHN FEED & SON, West Norwood, contributed a small number of blooms, including some of the varieties Britannia, Aristocrat, Victory, Beacon, Mrs. M. A. Patten, &c. An award of the R.B.S. large Silver Medal was made.

Mr. W. HOMEWOOD, nurseryman, Hampton, was an exhibitor of cut blooms of Carnations in some quantity, and among them was noticed Elizabeth, a glowing scarlet-coloured flower of regular form, and Rose Homewood, a pretty cerise variety.

A large Silver Medal was awarded to Messrs. HUGH LOW & CO. for a collection of Carnations, including Mikado, Salmon Lawson, Aurora, Aristocrat, Beacon, Oriflamme, Enchantresses of several tints, Mauviana, a rosy-purple variety of a new tint entirely, &c.

Mr. C. ENGELMANN, Horneybrook Nurseries, Saffron Walden, was an exhibitor of Carnations in pots, each plant bearing two or three blooms and a succession of buds. Many of the blooms were of extra large dimensions. The exhibitor was awarded a Silver Gilt Medal.

NATIONAL CHRYSANTHEMUM.

DECEMBER 9.—A meeting of the Executive Committee was held on this date at Carr's Restaurant, Strand, Mr. T. Bevan presiding. Certain questions were submitted for adjudication by the Enfield, Wimbledon, and St. Ives affiliated societies, and decisions were given. A proposal from Messrs. Norman Davis, Godfrey, and Wells was read, offering to contribute £5 each towards a class for 24 cut blooms at next year's show, providing the Society offered the second and third prizes. Much discussion ensued as to the advisability of continuing the December exhibition, and the matter was postponed for further consideration.

The dates for the 1908 shows were fixed as follows:—October 7 and 8, and November 4, 5, and 6; the December event to be settled later if a show is decided upon.

It was announced that prize money to the value of £37 10s. was awarded at the December show, and that all the prize money won at the three shows would be paid forthwith.

EXHIBITION OF MARKET VARIETIES.

DECEMBER 11.—The exhibition of market varieties of Chrysanthemum, held in the Foreign Flower Market, Covent Garden, on this date, was more interesting than usual, although the classes provided for Carnations were entirely unrepresented. The entries in the other classes were numerous, the quality of the blooms was excellent, and the varied colours rendered the display most attractive.

Class 1 called for a collection of market Chrysanthemums in bunches, to fill a table space measuring 15 feet by 3 feet, and here Mr. P. LADDS, Swanley, won premier honours for a magnificent display of fine blooms, bright and fresh in colour, amongst which the most prominent were Yellow Victoria, Matthew Hodgson, Golden Age, Mrs. P. Thompson, Negoya, Winter Cheer, Framfield Park, Snowdrift, and Lady Lennard.

In class 2, for a collection of blooms in a space 10 feet by 3 feet, Messrs. BUTLER BROS., Bexley Heath, were 1st, showing many varieties with good blooms. Mr. J. TULLEY, Enfield, was a close 2nd with fresh, handsome blooms. 3rd, Mr. F. S. GOUNDRIE, Dartford, Kent, his flowers being smaller but varied and brightly coloured.

Single Chrysanthemums.—These were well shown by Mr. J. TULLEY, who had the leading prize for three vases, showing Mona, Ryecroft Belle, and General Bullough. In the class for a collection of single Chrysanthemums, Mr. GOUNDRIE was given the 2nd prize for the best varied collection.

Plumed Chrysanthemums were not shown in great numbers. Messrs. J. & F. CHATFIELD

were awarded the 1st prize in the class for three vases, all of May McBean, a fine bronze variety.

In the class for 12 vases of market Chrysanthemums, Mr. PHILIP LADDS, Swanley, won the 1st prize, his varieties comprising Buttercup, Mrs. J. Thompson, Negoya, Mme. Oberthur, Golden Age, Mr. Hodgson, Framfield Park, Mme. T. Pankoucke, Mme. P. Radaelli, Snowdrift, and Winter Cheer. Mr. R. WEIR, 3, Forest View Villas, Enfield Highway, followed closely, his best blooms being Mrs. J. Thompson and Negoya.

A class was provided for a collection of market Chrysanthemums in bunches of sprays not disbudded, to fill a table space of 15 feet by 3 feet. Mr. P. LADDS won 1st honours for a bright and varied arrangement, the most prominent varieties being Germainia, Yellow Victoria, Abraham's Yellow, King of the Plumes, Tuxedo, Crimson Quintus, Niveum, Winter Cheer, Whit Victoria, Golden Age, and Lizzie Adcock.

Three vases of a yellow variety. The class for three vases of yellow market Chrysanthemums was a good one, both in competition and quality. Mr. J. TULLEY, Rose Nursery, Enfield Highway, was deservedly 1st for three vases of superb blooms, the best variety being Negoya. 2nd, Mr. R. WEIR, with the same variety, but not quite such good blooms.

White. There was an excellent display in this class for three vases of a white variety. Mr. R. WEIR secured the 1st prize, showing Guy Hamilton in admirable form. Mr. M. HUTCHINGS, Hillingdon, was 2nd.

Bronze.—The best three vases of a bronze market Chrysanthemum were shown by Mr. P. LADDS, having Tuxedo in excellent condition. Messrs. J. & F. CHATFIELD were 2nd with Mr. F. Chatfield, an incurved Japanese bloom of a peculiarly dull reddish tint.

Pink. Mr. P. LADDS was 1st for three vases of a pink Chrysanthemum, with Framfield Pink in excellent form. 2nd, Messrs. J. & F. CHATFIELD, Southwick.

Crimson.—Mr. R. WEIR was awarded the 1st prize for three vases of crimson Chrysanthemums, his variety being Lady Violet Beaumont, large and rich in colour. Mr. P. LADDS followed closely with Matthew Hodgson.

Packed boxes of Chrysanthemums. For the best-packed two boxes of market Chrysanthemums, Mr. R. WEIR was awarded the 1st prize, showing 36 blooms of Snowdrift in excellent form, and all arranged in a large box in rows of four blooms each. Mr. J. TULLEY was 2nd, showing Frank Wilcox arranged in a more compact way than the preceding exhibit.

A dozen different styles and varieties of packing were shown in this class.

For a table of one variety of a market Chrysanthemum, Mr. R. WEIR was placed 1st with a grand display of Guy Hamilton, Mr. P. LADDS following with Framfield Pink in capital condition; and Messrs. BUTLER BROS., Bexley Heath, were 3rd with the bronze Mabel Butler.

Plants.—In the class for a group of pot-grown Chrysanthemums, Mr. M. HUTCHINGS, Hillingdon, Uxbridge, won the leading prize for a neat and effective arrangement of well-grown plants. Messrs. BUTLER BROS. were placed 2nd with good plants, but a little too densely arranged.

In the class for six plants of decorative Chrysanthemums in pots, Mr. M. HUTCHINGS was adjudged the best exhibitor, and Messrs. BUTLER BROS. won the 2nd prize, both showing plants of a medium size and in a healthy condition.

It is a great advantage to have the fine spacious hall of the Flower Market at command for the purpose of a show like this, and the committee fully appreciate the boon conferred by the market authorities.

NATIONAL SWEET PEA

DECEMBER 6.—The annual general meeting of this society was held on this date at the Hotel Windsor, Westminster. About 40 of the members assembled. Mr. Leonard Sutton, the President, occupied the chair, and he moved the adoption of the yearly report and balance-sheet. We make the following extracts:—

REPORT OF THE EXECUTIVE COMMITTEE.

"The exhibition, the Reading trials, the Floral Committee's work, and the new affiliation scheme have all been eminently successful.

Fortunately, the date of the show in 1907 was

later than usual, and July 16 found Sweet Peas in grand condition throughout the southern counties, so that the display was more extensive and the flowers better than at any previous exhibition.

The extensive trials conducted at Reading University College were a great success, and the committee wishes to express its thanks to the College authorities for the opportunity of holding independent trials in its grounds, and to Mr. Chas. Foster, the Assistant Director in Horticulture, for the admirable manner in which the Sweet Peas were arranged and grown. If the society is to continue this work on the scale that seems desirable, further assistance is necessary, either in the form of voluntary contributions from raisers and others to whom the trials are of special value; a charge for every variety tested; or an increase of the minimum membership subscription.

At the Royal Horticultural Hall no fewer than 151 varieties were placed before the Floral Committee.

The following awards were made by the Floral Committee at the Royal Horticultural Hall, July 16:—Award of Merit.—To Elsie Herbert (C. W. Breadmore), Evelyn Hemus (Miss Hemus), Nancy Perkin (H. A. Perkin), Rosie Adams (T. Stevenson), Saint George (Hurst & Son), Silas Cole (S. Cole), and The Marquis (Dobbie & Co.). At the Reading trials, July 18: Silver Medal.—To Saint George (Hurst & Son), as the best novelty of the year. First Class Certificate.—To Saint George (Hurst & Son), and Helen Pierce (H. Eckford). Award of Merit.—To Princess Victoria (Dobbie & Co.), Nora Unwin (Watkins & Simpson), Lord Nelson (I. House & Son), and Prince Olaf (Dobbie & Co.).

Early in the year the hon. secretary received requests from several societies for guidance in preparing Sweet Pea classes, and for help in the shape of Silver Medals. These enquiries suggested the desirability of an affiliation scheme, and 22 societies have become affiliated.

One of the most pleasing and interesting features of the Sweet Pea year was the visit of Mr. W. Atter Burpee, of Philadelphia.

The committee has been greatly encouraged by the increase of membership during 1907. Two hundred and twenty-eight new members were added, and already 17 others have joined for 1908. Allowing for losses by death and other causes, the total membership is now 602.

Arrangements have been made to hold the London Show at the Royal Horticultural Hall on Friday, July 24, 1908. The committee fully recognises the fact that this is a late date, but it was impossible to obtain any date between July 3 and July 24, and the latter was chosen as most likely to suit the majority of members. In connection with the Royal Horticultural Society of Ireland, an exhibition will be held in Dublin on Wednesday, August 5, 1908.

The sales of the *Sweet Pea Annual* for 1907 amounted to about £21, as compared with £15 17s. in 1906.

The balance on the year's working (£37 14s. 4d.) is smaller than in 1906, but the work accomplished has been greater and of more importance than heretofore.

The adoption of the report was seconded by Mr. Geo. Gordon, and supported by Mr. Alex. Dean, who congratulated the society on its excellent report. The next business was the election of officers for the ensuing year. Mr. W. Cuthbertson, one of the two promoters of the bi-centenary exhibition of the Sweet Pea held at the Crystal Palace in 1900, was elected president; Mr. Ernest J. Edwards, chairman of committee. Mr. C. H. Curtis was re-elected secretary amid great enthusiasm, and he was asked to accept a sum of £25 as an honorarium for his services during the past year. The committee was also elected, vacancies being filled by the election of Messrs. Walter P. Wright, T. Stevenson, Herbert Smith, Leonard Sutton, John Shaw, A. G. Stark, Commander Humphries, E. King, and Martin Hitchin.

A gold medal, suitably inscribed, was presented to Mr. Chas. Foster for his services in conducting the trials in University College Gardens, Reading.

Mr. Robert Sydenham proposed the holding of the show on two days instead of on one as at present. The arrangements for 1908 being already fixed, it was considered impossible to hold a two days' show next year, but the subject was referred to the Executive Committee.

to consider for the 1909 show. In this connection the question of replenishing the vases with fresh flowers on the second day was considered, but the general opinion was that growers at a distance would be at a disadvantage, and that it should not be permitted.

Mr. Cuthbertson advocated that the chairman of the Floral Committee should also be, *ex officio*, a member of the Executive Committee, and this was decided upon.

Mr. Cuthbertson appealed for more members and increased funds to enable the society to conduct further experiments and to increase the remuneration to the hon. secretary. He advocated an American membership, with a dollar subscription. The question of new varieties was a serious one, and would prove a curse instead of a blessing unless the society exercised its authority in regard to their regulation.

NATIONAL POTATO.

DECEMBER 10.—The annual general meeting of this society was held in the Hotel Windsor on the above date, and it proved to be the last that will be held under these auspices. The committee's report was as follows:—

"In accordance with a resolution passed at the last annual meeting, a provincial show was arranged at the South-Eastern Agricultural College at Wye, on October 2, under the direction of Mr. W. P. Wright, the horticultural superintendent of that institution. The entries in the 34 classes numbered about 250, and throughout the show a very high standard of excellence was reached, evoking the unstinted praise of the many visitors. The reports in the horticultural and county Press testified to the splendid quality of the exhibits. A new departure, which thoroughly justified its introduction, was a series of county vegetable competitions for prizes kindly offered by Kent nurserymen, and in this section there was also a meritorious display of produce.

"In the afternoon there was a large attendance of members in the lecture-room at a conference, over which Mr. J. R. Dunstan, the principal, presided, and to whose cordial co-operation the committee are greatly indebted in arranging the show. An informative lantern lecture on 'Potato Diseases' was given by Mr. E. S. Salmon, F.L.S., followed by a useful discussion.

"The committee have been able to continue the valuable series of trials at the Cambridge University farm at Impington, under the able direction of Mr. H. Henshaw. Ten varieties have been included in the major trials, and four in the minor trials. The trials arranged in the local centres have been for the purpose of testing the effects of planting diseased seed, mature and immature seed, and sprouted and unsprouted tubers.

"During the year the society has been able to render a practical service in the dissemination of information bearing on Potato culture, in response to enquiries received from various parts of the Empire.

"Although a successful year's work has been accomplished, after careful consideration the committee have come to the conclusion that it is not advisable to continue the society in its present constitution. A resolution is to be proposed formally dissolving the society, with a view to considering the possibility, at a future date, of forming a new society which will include all vegetables within the scope of its operations."

Mr. Walter P. Wright, who presided, proposed the adoption of the report, which was carried.

The following resolution was also adopted:—

"That this meeting of members of the National Potato Society agree that the society be now dissolved, with a view, if possible, of steps being taken at a future date to consider the possibility of starting a new association which will include all vegetables in its operations."

The turn-over for the past year amounted to £168. All debts had been paid, and it was agreed that a small balance which remained should be given to the honorary secretary, Mr. W. H. Adsett, as an honorarium for his past services.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

NOVEMBER 28.—*Committee present:* Messrs. E. Ashworth, R. Ashworth, Ward, Warburton, Ashton, Shill, Sander, Cypher, H. H. Smith, P. Smith, Ball, Parker, and Weathers (hon. sec.).

In future, the exhibition will remain open until 4 o'clock p.m. instead of 3 p.m.

Nineteen groups of plants were staged, and the building could not properly accommodate the exhibits.

Cypripediums were largely in evidence: 90 per cent. of the plants shown belonged to this genus.

G. SHORLAND BALL, Esq., Burton, Westmorland (gr. Mr. Herdman), exhibited a group of Cypripediums of which C. × Leeanum, Under Fell var., C. insigne var. Aberdeen, C. i. maculatum var. nigrum, C. i. Chantini var. Lindenii, G. S. Ball's variety, in the group were given Awards of Merit. The group also contained C. × triumphans, C. × Maudiae, and C. insigne, "Harefield Hall variety." (Silver Medal.)

J. MCCARTNEY, Esq., Bolton (gr. Mr. Holmes), was awarded a Bronze Medal for a group of Cypripediums. C. × Leeanum, "Hey House variety," was given an Award of Merit.

Mr. W. BOLTON, Warrington, was awarded a Bronze Medal for a group of plants, Cymbidium × Holfordianum, a distinct hybrid, being voted an Award of Merit.

H. J. BROMILOW, Esq., Rainhill, Lancs. (gr. Mr. Morgan), displayed a group of Cypripediums, of which C. × Gaston Bultel, "King Edward variety," was awarded a First-Class Certificate, and C. × Leander var. superbum, an Award of Merit. Other notable plants included C. bellatulum var. album, C. × Priam, and C. niveum var. Goliath. (Silver Medal.)

A. WARBURTON, Esq., Haslingden (gr. Mr. Dalgleish), was awarded a Silver Medal for a choice group of plants consisting principally of Cypripediums, the whole being relieved by a few well-grown plants of Odontoglossum in variety. Cypripedium × Nandii received a First-Class Certificate; and those following were granted Awards of Merit:—Cypripedium insigne, Skinner's variety, C. × Mrs. Tautz, C. × Milo var. magnificum, and Odontoglossum × Wilckeanum, "Warburton's variety."

Messrs. HUGH LOW & Co., Enfield, exhibited an albino form of Odontoglossum Rossi, called "immaculatum." (Award of Merit.)

Messrs. SANDER & SONS, St. Albans, exhibited their variety of Cypripedium × Niobe, which is one of the best forms extant. This plant and C. × Rufus were granted Awards of Merit.

E. ROGERSON, Esq., Didsbury (gr. Mr. Price), gained an Award of Merit for Cypripedium Actæus var. Simonii.

Messrs. JAMES CYPER & SONS, Cheltenham, exhibited a fine group of plants, in which were some well-grown Cypripediums, Dendrobiums, and Cattleyas. (Silver Medal.)

J. H. CRAVEN, Esq., Keighley (gr. Mr. Corney), was awarded a Silver Medal for a group of plants that included several good forms of Cypripedium insigne, C. × Leeanum, and C. Actæus.

NORMAN C. COOKSON, Esq., Wylam-on-Tyne (gr. Mr. Chapman), staged a few interesting plants, the chief one being Cypripedium × Sanderæ, a compound hybrid of beautiful quality. (First-Class Certificate.) C. insigne Sanderæ, "Oakwood raised," also received a First-Class Certificate. C. × callosa-niveum received an Award of Merit.

S. GRATRIX, Whalley Range (gr. Mr. Shill), received Awards of Merit for Cypripedium × Mary Barff and C. × nitens, "Cobb's variety."

Messrs. CHARLES WORTH & Co., Bradford, staged an exhibit of plants that were rich in variety and quality. Cattleya Dowiana var. rosita was the most interesting plant in the group. It may best be described as an almost red variety of this favourite Orchid. (Silver Medal.) Cattleya × Millie received an Award of Merit.

ZIBA A. WARD, Esq., Northenden, exhibited Cypripedium insigne var. Cringlewoodensis.

R. FARRER, Esq., Ingleborough, received an Award of Merit for his variety of Cypripedium Fairrieanum.

Messrs. KEELING & SONS, Westgate Hill, Bradford, exhibited Bulbophyllum barbigerrum.

Mr. D. McLEOD, Chorlton-cum-Hardy, was awarded a Bronze Medal for a small but interesting group of Cypripediums.

Mr. J. ROBSON, Altrincham, also obtained a Bronze Medal for a group of Cypripediums.

Mr. W. SHACKLETON was awarded a Bronze Medal for a small group of Orchids.

J. LEEMANN, Esq., Heaton Mersey (gr. Mr. Smith), staged a fine display of Cypripediums, to which a Silver Medal was awarded.

G. H. PEACE, Esq., Monton Green (gr. Mr. Mace), was awarded a Bronze Medal for a group of Orchids. P. W.

THE SMITHFIELD CLUB SHOW.

DECEMBER 9-13.—Messrs. SUTTON & SONS, Reading, showed roots on a lavish scale and of astonishing size, more especially the varieties of Mangolds, namely, Prizewinner, the heaviest variety yet raised, crops of which have been grown of 150 tons per statute acre. There were fine large and shapely specimens of Swedes in a mound of roots consisting of Magnum Bonum. It is a handsome, purple-top variety, which is of rapid growth and very productive. Crimson King is another great cropper, good for early feeding. A yellow-fleshed Swede (new), named Sutton's Long Keeper, and immense cropper, and immune from disease, was noted; and likewise others, as Centenary and Favourite, Purple Top, and Aberdeen Turnip. The display of Grass seeds is noteworthy, the firm having an established reputation for permanent and temporary Grasses. Potatoes were abundantly shown on this stand, many of the firm's introductions that have given so much satisfaction being in evidence. They had also fine specimens of Onions and Tomatoes.

Messrs. JOHN KING & SONS, Coggeshall, Essex, and Reading, made an imposing exhibit of roots, of which we may make mention of the Mighty Atom, a very distinct-looking seedling Potato, obtained by much re-crossing. It is cultivated in South Africa, where it yields four crops in a year. A red kidney, named Senator, is handsome, of fine table and cropping qualities; Alpha, Lord of the Isles, Rentpayer, Victorious, The Shamrock (a cross between Scotch Champion and Up-to-Date, a round tuber, with a rough skin and floury when cooked, a heavy cropper and free from disease). Duke of Cornwall is a large kidney Potato of good quality. Other roots were Onions, Parsnips, Carrots, &c. Many varieties of garden Peas, and of such things as Scottish Chieftain White, and Champion Black Oats, Chevalier Barley, &c., were shown.

Messrs. J. CARTER & Co., seedsmen, High Holborn, London, made an immense exhibition of gigantic Mangolds, such as the Windsor (a yellow bulb), Intermediate (a long, yellow), Carter's Tankard, Mammoth, Emperor, and Goldfinder (a globular, red variety). The purple-top Elephant Swede and other roots, almost exclusively of agricultural interest, were observed. Very nice samples of seeds of Oat, Wheat, and Barley were among the exhibits, and a few shapely Potatoes were also observed.

Mr. ALEXANDER BLATCHFORD, seed grower, Coventry, had an interesting exhibit of the better class of garden Peas, including Prince Edward (a blue, wrinkled Pea, a heavy cropper), Gradus, Essex Star (a famous early market Pea), &c. Ailsa Craig Carrot, Cheltenham Beet (a selected, fine strain), Lisbournais Parsnip (very large roots), and Magnum Bonum Market Carrot were remarked.

Messrs. WEBB & SONS, Stourbridge, had a fine sample of their new Potato, Colonist, and their exhibit of older varieties was extensive and instructive; whilst their exhibit of roots, Mangolds, Swedes, was very imposing in extent and quality.

Other exhibitors of horticultural or agricultural produce included Messrs. T. A. Scarlett, 22 and 23, Market Street, Edinburgh; Garton's, Warrington; Isaac Poad & Sons, York; R. W. Green, Wisbech; Fidler & Sons, Reading; Jas. Gardner, Perth; J. Reid, Fordhouse, Montrose; A. J. Sole, Swineshead, Lincolnshire; The British Columbian Government; Richard Smith & Co., Worcester; W. & J. Brown, Stamford; J. Morrison, Marlborough; Dicksons, Chester; Horne & Sons, Rochester, Kent; Harrison & Sons, Leicester; and the King's Acre Nursery Co., Hereford.

ROYAL SCOTTISH ARBORICULTURAL.

DECEMBER 7.—The annual general meeting of the Aberdeen branch of this society was held in the Aberdeen University buildings on the above date, Mr. S. J. Gammel, of Drumtochty and Countesswells, presiding.

The annual report showed that the membership of the branch had slightly increased. Regret was expressed that greater advantage had not been taken of the offer of prizes to assistant foresters for essays on forestry subjects. The treasurer's report showed a credit balance.

Mr. Robert Scott, solicitor, Aberdeen, was re-appointed secretary.

With regard to the forthcoming show of the Highland and Agricultural Society in Aberdeen, it was decided to appoint a sub-committee to further the interests of the forestry department at that show.

After the business had been concluded, Mr. John Clark, forester, Haddo House, Aberdeenshire, read a paper on "The Woods in East Aberdeenshire," many of which he had visited during the past six months.

DUBLIN SEED AND NURSERY EMPLOYÉS.

DECEMBER 7.—In the Gresham Hotel, Dublin, on this date, the members of the above association held their fourth annual social re-union and dinner, the newly-elected president, Mr. D. MacLeod, occupying the chair.

Mr. G. Rice, in proposing the toast of "The Dublin Seed and Nursery Employés' Association," said he hoped the seed sown by the responsible members of that association would bear good fruit.

Mr. D. MacLeod responded, and strongly advised every member of the seed trade in Dublin to take an active interest in the working of the society. He said the time was coming when young men with certificates from such associations as theirs would receive the preference in the trade.

The president distributed the prizes offered for the best collections of weeds, and to the successful competitors in the society's examination.

GARDENING APPOINTMENTS.

Mr. A. JEWELL, late General Foreman at Bolnere Gardens, Hayward's Heath, as Gardener to H. RAMSBOTHAM, Esq., Crowborough Warren, Sussex.

Mr. R. DAVIDSON, late Gardener at Clufford Hall, Bury St. Edmunds, for the past 12 years, as Gardener to Sir GEORGE and Lady BULLOUGH, Kinloch Castle, Rhum, by Oban, N.B.

Mr. J. COUTTS, for 2½ years as Inside Foreman in The Gardens, Rossie Priory, Inchture, Perthshire, N.B., as Gardener to Mr. R. PRYOR, Esq., Weston Park, Stevenage, Herts. (The 2s. 6d. has been placed in R.G.O.F. Box.)

Mr. D. MCGREGOR, for the past 2 years and 9 months employed in the gardens of the Rt. Hon. J. PARKER SMITH, Jordanhill, Glasgow, as Gardener to Mrs. FARIE, Baronald, Lanark. (The contribution has been placed in R.G.O.F. Box.)

Mr. G. CALVERT, for the past 4½ years Gardener to PERCY MACQUOID, Esq., J.P., Rambury, Hungerford, Wilts., as Gardener to Sir BACHE CUNARD, Bart., Nevill Holt, Market Harborough, Leicester.

Mr. J. W. BENTLEY, for the past 6 years Foreman in the gardens at Alderbrook, Cranleigh, as Gardener to MARK FENWICK, Esq., Abbotswood, Stow-on-the-Wold, Glos.

Mr. T. E. TOMALIN, for the past 4 years Foreman at Middleton Park, Bicester, as Gardener to the Rt. Hon. the Earl of BESSBOROUGH, Bessborough, Piltown, Co. Kilkenny.

Mr. ALBERT RUSSELL as Head Gardener to E. TOSTAL BROADHURST, Esq., The Manor House, North Rode, Congleton, Cheshire. Mr. RUSSELL was previously for 5 years in the service of FITZHERBERT WRIGHT, Esq., The Hayes, Alfreton, Derby.

Mr. FREDERICK C. TREVORAH, late deputy Carnation grower to Messrs. HUGH LOW & Co., Bush Hill Park Nurseries, Enfield, as Carnation grower to the DUKE of MARLBOROUGH.

TRADE NOTICE.

Mr. GEO. HAMMOND has joined Mr. W. H. Hardy as Manager of the nurseries at 3, Ince Bridge, Gosforth, Newcastle-on-Tyne.

CATALOGUES RECEIVED.

JAMES VEITCH & SONS, LTD., King's Road, Chelsea—Strawberries.

WM. LUMLEY, Dawn Nurseries, Denvilles, Havant—Sweet Peas.

ROBT. BOLTON, Warton, Carnforth—Sweet Peas.

W. BULL & SONS, King's Road, Chelsea—Seeds.

MARKETS.

COVENT GARDEN, December 11.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—ED.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Acacia (Mimosa), dozen bunches	8 0	9 0	Lilium longiflorum	2 6	4 0
Anemones, doz. bchs.	1 0	2 0	— "tigrinum	1 6	2 0
Azalea, white, per dozen bunches	3 0	4 0	Lily of the Valley, p. dz. bunches	8 0	12 0
Fouvardia, doz. bchs.	6 0	8 0	— extra quality	12 0	15 0
Calla aethiopica, p. dozen	3 0	5 0	Marguerites, white, p. dz. bunches	2 0	3 0
— Guernsey	2 0	3 0	— yellow, per dz. bunches	2 0	3 0
Camellias, per dz.	2 0	2 6	Mignonette, per dz. bunches	2 0	3 0
Carnations, per dozen blooms, best American	3 0	4 0	Narcissus, paper white, per doz. bunches	1 0	1 6
— second size	1 6	2 0	— Soleil d'Or, per dozen bunches	3 0	3 6
— smaller, per doz. bunches	9 0	12 0	Odonotoglossum crispum, per dozen blooms	2 6	3 0
Cattleyas, per doz. blooms	8 0	10 0	Pelargonium, slow, per doz. bunches	4 0	6 0
Chrysanthemum, best specimen blooms, per dz.	4 0	6 0	— Zonal, double	4 0	6 0
— selected, per dozen	2 0	3 0	— scabell.	4 0	6 0
— medium, p. dz. bunches	12 0	18 0	Poinsettias, per dz. bunches	8 0	12 0
Cyclamen, per doz. bunches	4 0	6 0	Ranunculus, p. dz. bunches	8 0	12 0
Cypripedium, per dozen blooms	2 0	2 6	Roses, 12 blooms, Niphetos	1 0	3 0
Daffodils, p. bunch	1 0	1 3	— Bridemaid	2 6	4 0
Eucantia grandiflora, per doz. blooms	2 0	3 0	— C. Testout	2 0	3 0
Gardenias, per doz. blooms	2 6	3 6	— Kaiserin A. Victoria, per dozen blooms	2 6	4 0
Gladiolus, various hybrids, per dz. spikes	1 0	2 0	— Mrs. J. Lang	1 0	3 0
— Brecht's variety	1 6	2 0	— C. Metmet	2 0	3 6
Hyacinths, Roman, per doz. bunches	6 0	10 0	— Liberty	2 0	6 0
Lilac (French), per bunch	3 0	4 0	— Mad. Chateaux	2 0	5 0
Lilium auratum	2 0	3 0	Safrano (French), per dz. bunches	9 0	12 0
— lanceolatum, per doz. bunches	6 0	10 0	Spiraea, doz. bchs.	5 0	8 0
— album	2 0	2 6	Stephanotis, per dozen trusses	4 0	6 0
			Tuberose, per dz. blooms	0 4	0 6
			Tulips, dz. bunches	1 0	1 6
			Violets, p. dz. bunches	1 0	2 0
			— special quality	2 6	3 0
			— Parmas, p. bch.	2 0	4 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Adiantum cuneatum, dz. bchs.	4 0	6 0	Hardy foliage (various), per dozen bunches	3 0	9 0
Asparagus plumosus, long trails, per doz.	8 0	12 0	Iris foetida fruits, p. dz. bunches	5 0	6 0
— medium	1 0	2 0	Ivy-leaves, bronze	2 0	2 6
— Sprenger	0 6	1 0	— long trails per bundle	1 6	3 0
Berberis, per doz. bunches	2 0	2 6	— short green, per dz. bunches	1 6	2 6
Croton leaves, per bunch	1 0	1 3	Moss, per gross	4 0	5 0
Cycas leaves, each	1 6	2 0	Myrtle (English), small-leaved, doz. bunches	4 0	6 0
Fern, English, per dozen bunches	1 0	2 0	— French, per dz. bunches	1 0	1 6
— French, per dz. bunches	1 0	3 0	Pernettya, p. bunch	0 6	0 9
Galax leaves, per doz. bunches	2 0	2 6	Smilax, per dozen trails	2 0	3 0

Plants in Pots, &c. Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Ampelopsis Veitchii, per dozen	6 0	8 0	Erica gracilis, doz.	10 0	12 0
Aralia Sieboldi, dz.	4 0	6 0	— nivalis, per dz.	12 0	15 0
— larger	9 0	12 0	— hyemalis	12 0	18 0
— Moseri, per dz.	6 0	12 0	Euonymus, per dz.	4 0	9 0
Araucaria excelsa, per dozen	12 0	30 0	Ficus, in thumbs, per 100	7 0	10 0
Aspidistras, green, per dozen	15 0	30 0	— in small and large 60's	12 0	20 0
— variegated, per dozen	30 0	42 0	— in 48's, per dz.	4 0	10 0
Asparagus plumosus nanus, doz.	9 0	12 0	— in 32's, per dz.	10 0	18 0
— Sprenger, dz.	8 0	10 0	Ficus elastica, dz.	9 0	12 0
— ten ussimus	9 0	12 0	— repens, per dz.	4 0	6 0
Azalea indica	24 0	36 0	Hyacinths (Roman), per dozen pots	12 0	15 0
Begonia Gloire de Lorraine, p. dz.	8 0	15 0	Kentia Belmoreana, per dozen	18 0	30 0
Bouvardias, per dz.	6 0	8 0	— Fosteriana, per dozen	18 0	30 0
Callas, per dozen	10 0	12 0	Latania borbonica, per dozen	12 0	18 0
Chrysanthemums, per dozen	9 0	12 0	Lilium longiflorum, per dz.	15 0	24 0
— best disbudbed	18 0	24 0	— lanceolatum	12 0	18 0
Clematis, per doz.	8 0	9 0	Lily of the Valley, per dozen	18 0	30 0
Cocos Weddelliana, per dozen	18 0	30 0	Marguerites, white, per dozen	6 0	8 0
Crotons, per dozen	18 0	30 0	Poinsettias, per dz.	9 0	12 0
Cyclamen, per doz.	9 0	12 0	Selaginella, per dz.	4 0	6 0
Cyperus alternifolius, dozen	4 0	5 0	Solanums, per doz.	5 0	9 0
— latus, per doz.	4 0	5 0	Spiraea japonica, dz.	8 0	12 0
Dracenas, per doz.	9 0	24 0	Veronicas, per dz.	4 0	6 0

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples (English), per bushel	5 0	7 0	Grapes, English	2 0	4 0
— Wellington	5 0	7 0	— Muscats, p. lb.	2 0	4 0
— Northern Greening	4 0	5 6	— Canon Hall, per lb.	2 0	5 0
— Newton Wonder	5 0	6 6	— Belgian Colmar, per lb.	0 8	1 0
— Bramley's Seedling	5 0	7 0	— Almeria, per barrel	10 0	20 0
— Lord Derby	5 0	6 0	Lemons:		
— Pear Food	5 0	7 0	— Malaga, case	14 0	15 0
— Nonch	5 0	7 0	— Messina, case	10 0	18 0
— King Pippins	4 6	6 0	— Naples, p. case	17 0	24 0
— Blenheim Pippin	4 6	6 0	Lyches, per box	1 0	
— Cox's Orange Pippin, ½ sieve	7 0	14 0	Mandarines, per box	1 0	1 3
— Nova Scotian, per barrel	14 0	15 0	Mangoes, per doz.	4 0	8 0
— Ribston Pippin	15 0	16 0	Medlars (English), ½ sieve	3 6	—
— Gloria Mundi	16 0	17 6	Nuts, Cobs (English), p. lb.	0 3	—
— Blenheim	15 0	16 0	— Grenobles Walnuts, per bag	7 6	8 6
— King's	15 0	16 0	— Almonds, bag	42 6	—
— New York Imperialists	20 0	21 0	— Brazils, new, per cwt.	70 0	—
— Canadian, per barrel	17 0	19 0	— Barcelona, per bag	32 6	—
— Northern Spy	17 0	19 0	— Cocoa nuts, 100	12 0	16 0
— King of the Pippins	17 0	18 0	Chestnuts:		
— Baldwin	15 0	17 0	— Italian, per bag	12 0	15 0
— N. Greening	16 0	18 0	— Redon, per bag	7 0	9 0
— Ribston Pippin	16 0	18 0	Oranges (Jamaican), per case	5 6	9 6
— Blenheim Pippin	19 0	21 0	— Almeria, case	10 6	12 0
— Californian	19 0	21 0	— Valencia, case	7 0	15 0
— Newtowns, per box	9 0	12 0	— Denia, p. case	12 0	20 0
— "Oregon" Newtowns, per box	12 0	14 0	— Jaffas, per box	6 6	7 6
Avocado Pears, per dozen	4 0	8 0	Pears (English), Catillac, per bushel	4 6	6 0
Bananas, bunch:			— Doyenné du Comice, per dozen	1 6	4 0
— No. 2 Canary	6 0	6 6	— P. m. maston Duchess, per dozen	1 6	2 6
— No. 1	7 0	7 6	— French, Doyenné du Comice, per crate	10 0	11 0
— Extra	8 0	8 6	— Bourré Magnifique, per box	10 0	—
— Grants	9 6	10 0	— Catillac, Dutch, per basket	2 6	—
— Jamaica	5 0	5 6	— per barrel	10 0	—
— Loose, per dz.	0 9	1 3	— Glou Morceau (French), per box	9 0	10 6
Cranberries, p. case	6 6	7 6	— Winter Nels, per box	16 0	18 0
"Custard" Apple (Anona) per doz.	4 0	12 0	Pineapples, each	2 6	5 0
Dates (Louis), doz. boxes	4 6	4 9			
Grape Fruit, case	9 0	11 0			
Grapes (English), — Alicante, p. lb.	0 6	1 0			
— Gros Colmar, per lb.	0 8	1 6			

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes (French), per dozen	3 0	3 6	Lettuce (French), per dozen	1 1	1 4
Asparagus, Paris Green, bundle	4 0	4 6	— Cos (French), per dozen	5 9	6 0
— Sprue, bundle	0 5	0 6	Mint, doz. bunches	0 9	1 0
Beans, French, per packet	0 3	0 4	Mushrooms (house), per lb.	0 10	1 0
— Guernsey, p. lb.	0 6	0 7	— buttons, per lb.	0 10	1 0
— Madeira, per basket	3 0	3 6	— "Brolets" p. lb.	0 8	0 9
Beetroot, bushel	1 3	1 6	Mustard and Cress, per dozen pun.	1 0	1 6
Brussel Sprouts, ½ sieve	1 0	1 6	Onions (Spanish), per case	5 0	5 6
Cabbages, per doz.	0 6	0 9	— Dutch, per bag	4 0	—
— Greens, bag	1 0	—	— pickling, per bushel	2 0	2 6
— red, per dozen	2 0	—	Parsley, 12 bunches	1 6	1 9
— Savoys, per tally	3 0	—	— ½ bushel	1 0	1 6
Carrots (English), — washed, p. bag	2 6	—	Potatoes (French), new, per lb.	0 4	—
— French (new), per pad	3 6	3 9	Salsafy, per dozen bundles	3 6	—
Cauliflowers, p. dz.	1 6	2 0	Seakale, per dozen punnets	12 0	14 0
— per tally	7 0	10 0	Spinach, English, per bushel	2 0	—
Celeriac (French), per dozen	1 6	1 9	Tomatoes, selected, per dozen lbs.	2 9	4 0
Celery, washed, per dozen	0 8	10 0	— small selected, per dozen lbs.	2 6	3 6
Chicory, per lb.	0 3	0 3 ½	— Teneriffe, per dozen boxes	11 0	14 0
Chow Chow (Secchium edule), p. dozen	3 0	—	Turnips (English), doz. bunches	2 0	3 0
Cucumbers, per dz.	2 0	3 6	— per bag	2 6	—
Endive, per dozen	1 6	2 0	Watercress, per doz. bunches	0 4	0 6
Horseradish, foreign, per doz. bundles	10 0	12 0			
Leeks, 12 bundles	1 0	1 6			

REMARKS.—Apples continue to arrive in large quantities and are cheap, with the exception of good samples of the varieties Northern Greening and Wellington. As is to be expected at Christmas time, Oranges have made an advance in price; the quality of these fruits generally is not good, but those arriving from Jamaica are decidedly the best. Teneriffe Tomatoes are much dearer, in consequence of the home supplies being nearly finished. There is a slight improvement in the trade for English hot-house Grapes. New Carrots and Potatoes from France are now on the market. Beans from Madeira are arriving in an unsound condition, and they have to be sorted and repacked before they can be offered for sale. P. L., Covent Garden, Wednesday, December 11, 1907.

POTATOES.

Kents, 3s. 6d. to 5s. per cwt.; Lincolns, 70s. to 90s.; Blacklands, 70s. to 85s.; Maincrops, 90s. to 100s. per ton; Dutch Magnums, 3s. to 3s. 6d. per bag; Dutch Imperators, 2s. 6d. to 3s. per bag; Dunbar Dates, 5s. to 6s. per bag. Owing to the mild, changeable weather, trade is dull. J. D. C., Covent Garden, December 11, 1907.

COVENT GARDEN FLOWER MARKET.

With Christmas near at hand, there is a better trade for country orders, especially for foliage plants. Ferns, Aralias and Solanums have been more in demand. *Ficus elastica* does not sell so well as formerly for Christmas trade. Aspidistras are selling better, but there is evidence that prices for this useful plant will drop later. In Palms, Kentas are making better prices, yet most salesmen have some unsold plants on their stands at closing time. Latanias have advanced a little in value, but some growers accept low prices to clear their stocks.

Trade in flowering plants does not greatly improve. Chrysanthemums of good quality are seen. Framfield Pink and Winter Cheer are specially worthy of note. Niveum is perhaps the best white variety. Guy Hamilton is another good "white," and no better yellow variety is seen in pots than Jardin des Plantes. Supplies of good crimson and bronze-flowered varieties are short. Begonia Gloire de Lorraine and its varieties are selling at advanced prices. Cyclamen also command better prices. A few Genistas are seen, but they are not wanted at present. White Marguerites are plentiful and good. Spiraeas are also seen in well-flowered plants. Azalea indica are scarcely up to the ordinary standard of quality. Lily-of-the-Valley, Daffodils, and Liliums are well supplied, but it is unsafe to record what they may be worth at Christmas time. Poinsettias have not been selling very well up to the present, but they will clear better later.

CUT FLOWERS.

All supplies are now variable. Chrysanthemums being still the leading feature. White varieties are very plentiful. Lord Brooke is one of the best bronzes, and there is no better yellow than Negoya. Lady Beaumont is perhaps the best crimson. Of pink kinds are seen Winter Cheer, Framfield Pink, and A. J. Balfour. Growers have again taken up the culture of the last-named variety, which is one of the best both for cut bloom and for pot-plants. Mrs. Thompson is a good "white," and the yellow sport is appreciated. Liliums fluctuate from day to day. Their value increased a week or more ago, but they are cheaper again. Supplies for the Christmas trade are likely to be fairly plentiful, but all buyers will do well to order at fixed prices early. Lily-of-the-Valley has advanced a little in value, and it may be still dearer for the Christmas trade. English grown White Lilac is seen, but the best samples are from France. Daffodils are not selling quite so readily. Prices for imported Narcissus Soleil d'Or of best quality have advanced slightly, but Paper White Narcissus is cheaper. Gardenias are scarce, and Stephanotis is practically finished for the season. Camellias have been making better prices. Callas are plentiful, and it is probable that the supplies for Christmas will be good.

Holly and Mistletoe are both remarkably good, and will probably be cheaper than usual this season. The imported *Ruscus racemosus*, with about six to eight sprays in a bunch, realises from 1s. 6d. to 2s. per bunch. Galax leaves from America are now arriving. The hardy English foliage, except Berberis, is now of doubtful quality. A. H., Covent Garden, Wednesday, December 11, 1907.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending December 11.

Warm and very wet with a singularly dry atmosphere.—If we except the first day, all the other days of the present month have been unusually warm, and on the 8th inst., the temperature in the thermometer screen rose to 56°, which is, with one exception, the highest reading recorded here in December, at all events during the last 21 years. The night temperatures were, on the other hand, very variable. On the coldest night the exposed thermometer showed 12° of frost, whereas, on the following night, the same thermometer never fell lower than 41°. The ground is now warm for the time of year, the temperature, both at 1 and 2 feet deep, being 2° warmer than is seasonable. Since December began rain has fallen on all but three days, and to the total depth of 2 inches, which is only ½ an inch short of the average rainfall for the whole month. During the same 10 days 10 gallons of rainwater has come through the bare soil percolation gauge, and 7½ gallons through that on which short grass is growing. The sun shone on an average for 2 hours 48 minutes a day during the past week, which is more than double the average duration for this period in December. The winds have been, as a rule, high, and on one day the mean velocity for the windiest hour reached 17 miles—direction W.S.W. The mean amount of moisture in the air at 3 p.m. was as much as 8 per cent. less than a seasonable quantity for that hour. E. M., Berkhamsted, December 11, 1907.

Obituary.

JAMES ANDERSON.—We regret to record the somewhat sudden death of this gardener on the 5th inst. He had been the head gardener and trusted servant of the late Sir C. M. Lampson, and since his death continued in the same capacity with Mrs. Lock-Lampson, of Rowfant House, Crawley, Sussex. Deceased was an excellent gardener, and was especially successful in the cultivation of hardy fruits. Peaches were his favourites, and finer fruits than he obtained were not to be seen. His services as a judge of fruit always met with appreciation.

ANSWERS TO CORRESPONDENTS.

APPLE AND PEAR SHOOTS: *Anxious.* Shoots can be cut off at the present time for use as scions in grafting next spring. They can be kept in a plump condition by laying them thinly in a trench 1 foot deep, treading the soil firmly about the shoots as it is filled up to the ground level. When they are lifted in spring they will need to be carefully washed before being used.

APPLE RIBSTON PIPPIN: *J. A.* The fruit is injured by *Monilia fructigena*. This fungus first appears on the leaves, then passes on to the fruit. Spray the trees with the Bordeaux mixture next spring when the leaves are fully grown.

BEGONIA: *Learner and W. G.* In neither instance can any organic disease be found in the specimens received, which are not sufficient to afford any clue to the source of the mischief. We are inclined to think the methods of cultivation are not quite suitable.

BRITISH GARDENERS' ASSOCIATION: *C. R.* Address the Secretary, Mr. John Weathers, Talbot Villa, Talbot Road, Isleworth.

CHRYSANTHEMUMS FOR MARKET: *Ajax.* Very much depends upon the treatment the plants receive. This season Madame Desgranges was good until late in October, but ordinarily it should be one of the first to flower. This variety is of good market value, both in sprays and disbudded blooms; also the yellow variety from August until the end of October, but those who grow them best have specially-selected stock. Harvest Home is still one of the best early red varieties. Goacher's Crimson is good, but rather inclined to lose its foliage. Lady Fitzwigram is a good white variety, but is better when disbudded than when grown to furnish sprays. The varieties of Madame Marie Masse type are numerous, it having given sports of various colours. These are valuable for furnishing early sprays, and when disbudded and well-grown are capable of producing good blooms of medium size. Horace Martin, one of this type, is the best early yellow variety. Ralph Curtis is a good cream-coloured flower, and there is a white and pink variety; but the bronze varieties are very uncertain, as the flowers lose their colour so soon after they open. Market White, Market Red, and Market Yellow are good sorts to succeed those already mentioned. A. J. Quintus is a good early white variety; Alice Byron is only good when disbudded. For October there are Soleil d'Octobre, the bronze variety, and a good terra-cotta-coloured sport. William Holmes is still one of the best crimson varieties; Cullingfordii is still a favourite with some growers. For the cultivation of sprays, Source d'Or and Lizzie Adcock are very good. Kathleen Thompson and Caprice du Printemps are good second early varieties. Murillo is an excellent pink flower. The variety A. J. Balfour flowers later, and is good as sprays or disbudded blooms. Money-maker is one of the best white flowers for October. Madame Paolo Radaelli and the yellow sport Madame Rival are good all through the season, but should be disbudded. Matthew Hodgson and Lady Beaumont are the best late crimson varieties. Negoya is the best late yellow sort, but H. W. Reiman is also a good one. Lord Brooke is the best December "bronze," and La Pactole is a good "bronze" for October. Mrs. Thompson, Niveum, and Madame T. Pankoucke are good late white-flowered sorts. Madame L. Charvet is the best late pink variety. Lord Hopetoun may be recommended as a late crimson sort. Western King is a great favourite, and may be seen in the market from October until Christmas. Market Red flowers during October, and is very fine when disbudded. It may be added that varieties which succeed with one grower sometimes fail with another. See also the report of the Chrysanthemum exhibition on p. 421.

CINERARIAS: *J. S.* The plants are attacked by *Sclerotinia*, and cannot be saved. The soil in which they are growing should be sterilised by burning.

GLOXINIA: *Abinger.* Gloxinias have been crossed with *Sinningia*, and the form you send appears to show the characters of *Sinningia* to an unusual degree.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time; they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. Correspondents not answered in one issue are requested to be so good as to consult the following numbers.

FRUITS: *T. A. G.* 1, Ribston Pearmain; 2, Roi d'Angleterre; 3, King of Tompkins County.—*W. Jaycock.* Roundway's Magnum Bonum, one of the best flavoured of Apples.—*A. E. T.* Borsdofer.—*P. M.* 1, Beurré Diel; 2, Uvedale's St. Germain; 3, Golden Noble; 4, Bramley's Seedling.

PLANTS: *J. S.* 1, *Seraphyta multiflora*; 2, *Epidendrum nutans*.—*N. R.* 1, *Lycaste xytriorhiza*; 2, *Aerides japonicum*; 3, *Masdevallia coriacea*; 4, *Vanda parviflora*; 5, *Saccolabium ampullaceum*; 6, *Selaginella Wildenowii*.—*Læia.* *Lælia furfuracea*.—*T. V.* 1, *Begonia sub-peltata* variety; 2, *Dieffenbachia picta*; 3, *Fittonia Pearcei*; 4, *Maranta Massangeana*; 5, *Cypripedium venustum*; 6, *Epidendrum ciliare*.

PEAR: *A. H. W.* There is no disease present. The fruit has been checked in growth, and the skin has been broken up into fragments, giving the "russet" appearance normal to some kinds of fruit.

PRIMULA X KEWENSIS: *Primula.* The leaves are affected with the Primrose-mildew—*Peronospora candida*. Spray both foliage and soil with a solution of sulphide of potassium at the strength of 2 ozs. in three gallons of water. It would be wise to remove infected plants from the neighbourhood of the healthy ones.

PRUNING OF CLIMBING ROSES: *Anxious.* It is not necessary to prune newly-planted climbing Roses so severely as Hybrid Perpetuals or Tea varieties. The best results will be obtained by giving them what pruning they require at planting time. The small side growths should be cut close back, but leave the leading shoots about 2 feet in length, the weaker ones correspondingly shorter, but not less than 1 foot. This treatment should be given plants that are lifted from the open ground. In the case of plants turned out of pots it is only necessary to remove the unripened ends of the long shoots, and any old wood which will not flower. The long shoots which were made last summer will flower well, and this is an advantage gained by the use of pot-grown plants.

ROOTS: *J. B.* The rotting of the roots is due to the presence of stagnant water in the soil. The drainage of the border is probably bad, and requires attention.

SELECT VARIETIES OF CLIMBING ROSES: *P. M.* The following varieties are suitable for your purpose, being of strong, hardy constitutions, free flowering habit, capable of making the greatest amount of growth, and having flowers of several colours: *Félicité-Perpétue*, creamy-white; *Rubin*, deep crimson; *Blush Rambler*, resembling the tint of Apple blossoms; *The Garland*, nankeen and pink; *Aglaia*, bright yellow; and *Madame d'Arblay*, white cluster. You have already planted *Turner's Crimson Rambler* and *Dorothy Perkins*.

SOIL FOR ANALYSIS: *A. H.* We do not undertake to analyse soil. Dr. Voelcker, 22, Tudor Street, London, will undertake the work for Fellows of the Royal Horticultural Society on payment of a small fee.

COMMUNICATIONS RECEIVED.—*A. D.*—*F. J. C.*—*W. I. G.*—*H. L. & Co.*—*H. W.*—*J. L.*—*A. J.*, Essex—*W. H. C.*—*W. A. C.*—*F. M.*—*J. D. G.*—*J. H.*—*C. T. D.*—*F. L.*—*A. C. F.*—*A. C.*—Subscriber—*W. W. P.*—*J. W. McH.*—*S. W. F.*—*J. McI.*—*J. J. W.*—*D. W.*—*Practical Gardener*—*E. Wiseman*—*E. S.*—*J. H.*—*M. W.*—*Saxon*—*H. J. V.*—*F. G.*—*H. A. I.*—*E. G. A.*—*J. B.*—*H. D.*—*F. G. C.*—*Constant Reader*—*E. S.*—*C. R.*—*Sir E. Fry*—*R. M.*—*G. H. G. F.*—*C. C.*—*C. W. B.*—*G. W.*—*H. J.*—*J. B.*—*J. C. W.*



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WINTER WORK IN THE SHRUBBERIES.

IT is only during the winter months that time can be found for effecting a proper overhauling of the shrubberies, as, during the rest of the year, there is so much to be done in the other parts of the garden. To keep a shrubbery or a collection of trees and shrubs in good order, so that every plant will be in good health and show itself to the best advantage, annual prunings, thinnings, and mulching are necessary. If these operations are carried out every year it is surprising what a short time is required to treat a considerable area of shrubbery, but if the work is neglected for a few years, it seems as if the more that is done the more there will remain to be done.

The Evergreen species most commonly planted in shrubberies are the Common and Portugal Laurels, Hollies, Yews, Box, Osmanthus, Phillyræas, and Conifers of the Cupressus and Thuya types. If a formal shape is desired, these must be clipped with the shears, but in a mixed border formality is not usually the object, and the plants merely require to be kept in their place, so that they

will not encroach injuriously upon their neighbours. The shears, therefore, should be discarded in favour of the knife, with which any long straggling branches can be cut back, or even the whole plant be made smaller by thinning them out. The latter operation, if performed skilfully, can be so managed that the plant will show little or no sign of having been touched. This is the true art of pruning, and it can only be attained by constant practice. To clip a plant with the shears is a fairly easy matter, as every shoot is served alike, and it merely requires a true eye to enable the operator to carry out the work properly; but to trim a plant with a knife is a task requiring more time and very careful judgment. Conifers, however, must be cut with the shears if any trimming is required, as their growth is naturally symmetrical, and on some soils they are apt to get straggling and thin if not kept cut in. This work is best if left until the months of April or May, when the new growth will soon hide the marks left by the shears.

There is no general rule to follow with regard to the pruning of deciduous flowering trees and shrubs, for they vary in their times of flowering and also in the wood the flowers are borne upon, so that indiscriminate pruning is likely to result in obtaining gross growth and flowerless plants. The flowering trees most commonly grown are Almonds, Flowering Peaches, Laburnums, Thorns, Flowering Cherries, Pyrus of sorts, Red and White Horse Chestnuts, Robinias, and Magnolias. These ought to be thinned out, and any long shoots cut back after flowering, but time for such operations cannot, unfortunately, always be spared at the right time, and the work can be done nearly as well in winter. Thinning of the shoots is almost as important with flowering trees as it is with Plums, Apples, or other fruits, the aim being to obtain stout, well-ripened wood capable of producing plenty of large, well-coloured blooms. This can only be done by exposing every part of the tree to the influences of the sun and air, and thereby ensuring that thorough ripening of the wood so essential to success.

Many shrubs flower better on young wood than on the old wood, so that a cutting-back in winter or early in spring is best for them, as the flowers come larger and better coloured, and are also produced somewhat later, so that the season of bloom is prolonged. Some of these are Buddleia japonica and B. Lindleyana, Ceanothus americanus, C. azureus, and the garden hybrids such as Gloire de Versailles, Marie Simon, Indigo, &c., Clematises of the Jackmannii, lanuginosa, and viticella sections, Coluteas, Cytisus nigricans, Hypericums, together with the Spiræas betulifolia, Douglasii, japonica, Foxii, Anthony Waterer, &c. These should all be cut back to within two or three eyes of the old wood, and it is better for the plant to be pruned severely than not enough. All other flowering shrubs should only have their growths thinned out, which is best done immediately after they have flowered, but much may be done in winter by cutting away thin, weak wood, and leaving the young, strong shoots more exposed to the light and air. In short, the treatment that is accorded to Black Currants is suitable for many flowering shrubs if applied in a modified form,

varying according to the different requirements of each plant.

TRANSPLANTING.

This work will depend on the state of the shrubbery, whether it requires thinning or not, but practically all deciduous trees and shrubs can be moved during the winter months, even if they have stood in the same positions for some years together. Evergreens, on the contrary, cannot be moved with safety if they have not been kept regularly transplanted, unless they are lifted with a large ball of soil that will contain most of their roots. This will mean a considerable weight of soil to move, and the ball of soil must be kept intact, so that the lifting of large Evergreens is not a task to be lightly undertaken.

MULCHING.

In speaking of mulching in the shrubbery, it is not so much the application of a certain amount of manure per square yard that is meant, as the leaving upon the ground of that natural mulch of leaves which fall from the plants every year. Tidiness in a garden is highly creditable, but when it is carried to the extent of raking off every leaf and weed from the shrubberies and nothing is applied to the soil as compensation, it is carrying cleanliness to excess. There is nothing better for trees and shrubs than to leave them their natural mulch of leaves, which will keep them in good health for years together without any other assistance. This can be seen at any time in a wood, where the trees live and thrive, though close together, on the leaves and small dead wood that are continually falling from them. On the top of a hill, or in an open space where the wind blows the leaves away, the trees will be found smaller and more stunted than their neighbours under happier conditions, due not so much to exposure as to being robbed of their proper mulch. If, therefore, woods and forests will thrive without any attention at the root, then a shrubbery will do the same if the rake is kept away from it, and it is allowed to benefit by its natural mulch of leaves. There may be a few plants that require a dressing of manure to keep them in good health, but the majority of species will be found to live and thrive well without any, if the ground is not raked over to expose their surface-roots to the action of sun and wind. If the border is so full of roots that the leaves cannot safely be dug in, then a little fresh soil can be brought to cover them, but on no account should they be taken away unless an equivalent amount of leaf-mould is applied as compensation. J. C., Bagshot.

PEROVSKIA ATRIPLICIFOLIA.

FOR the past few years I have been much impressed with the rare beauty of this Himalayan Labiate, and am glad to see it is likely to become generally cultivated. The plant resembles Teucrium in its beautiful silver-grey colouring. I may describe it as a free-habited rock plant, a border plant, a sub-shrub for the sunny shrubbery, and particularly as a "rift" plant for grouping between taller trees. It has a hard-wooded root-stock, from which it throws up several grey-white growths which branch freely, droop somewhat, and are terminated by a pretty panicle of lavender-blue flowers that are not unlike those of Lavender in colour and shape, but the panicles are often 18 inches long, and

have from 10 to 20 lateral growths. The colour note of the whole plant—grey-white with blue inflorescences—is just what is wanted in the flower garden in October; Lavender gives it, Teucrium gives it, and in the case of *Perovskia* there is added charm in the pretty inflorescences late in autumn. In the rock-garden it could be well used at the base of large boulders, and in the pleasure there is further use in furnishing the bare spaces beneath trees that do not throw too dense a shade. The growths are attractive from the first by reason of their colour and the pretty, broadly lance-shaped, serrate leafage they carry. Added to this is a spicy fragrance, manifest in leaf and stem when touched, and which becomes particularly peppery as one approaches the root of old specimens. Propagation is affected by cuttings rooted in spring and autumn in closed frames *G. B. Mallett*.

THE HARDY FLOWER BORDER.

LILIUM MARTAGON VAR. ALBA.

This beautiful Lily is not seen in the garden as often as it deserves. Perhaps this is partly due to the circumstance that the plant is rather particular as to its requirements in the matter of drainage and exposure. The Turk's Cap Lilies are common plants in the sub-Alpine pastures of Southern Europe, and this habitat should suffice to give an indication of the treatment they demand. For several years we endeavoured to cultivate the white Martagon in the ordinary border, but it was not satisfactory, and, although the bulbs blossomed, they seemed hardly worth growing. They were tried in various situations, and at last were planted on the highest part of the rock-garden, rather in exasperation than with the expectation of improvement. But ever since that time the plants have been the admiration of all who have seen them. A bulb that had languished in the border, producing perhaps 8 or 10 flowers on a stalk, when transplanted to the new situation sent up in the first year a strong stem bearing 28 blossoms, and it increased considerably so that in the following season three stems, carrying respectively 26, 23, and 18 flowers were produced, whilst this season seven flowering stems were formed, on which 128 flowers were altogether formed. Five of the stems bore more than 20 blossoms apiece. Of course, this method of treatment might not have succeeded everywhere, but these white Martagon Lilies are so beautiful when they do succeed that they are worth the trouble of making a few experiments. *X.*

SESELI GUMMIFERUM.

APART from their botanical interest, most of the species of *Seseli* are not valuable garden plants, but *S. gummiferum* is an exception in this respect, being an ornamental plant nearly the whole year through. It is a perennial species, having a thick, stiff stem, which grows to a height of 2 feet or more, and bears long, tripinnate, very glaucous leaves. The inflorescence is much branched towards the top, bearing compound umbels of white flowers, tinged with pink. The flowering season is from July to September.

A well-established plant consisting of about a dozen young stems, besides the flowering ones, has a very pleasing and distinct appearance, and when not in flower generally arrests attention by reason of its handsome glaucous foliage. In the Cambridge Botanic Garden, *S. gummiferum* is cultivated in an exposed position out-of-doors.

It is figured in the *Bot. Mag.*, t. 2,259, as the "Gummy Meadow Saxifraga." It was first found by Pallas in the Crimea, and has been known in gardens since 1804. The stem when wounded, especially in dry weather, exudes a strong-smelling gum-resin. *E. J. Allard*.

ARTEMISIA LACTIFLORA.

This plant deserves to rank with the very best of the Chinese plants recently introduced to cultivation. Although belonging to a genus of little horticultural value, this extraordinary Wormwood will prove invaluable in the autumn flower border, not only in the south, but in the coldest parts of Scotland also; there is no plant to surpass it in elegance late in the season.

The stems are like those of the florists' Chrysanthemum, stout and upstanding, and they are densely clothed with Chrysanthemum-like leaves. The inflorescence is a giant panicle of white composite heads closely adpressed to the floral branches, the lateral growths and the

stems being of a pithy description are seemingly incapable of absorbing water. *G. B. Mallett*.

AMICIA ZYGOMERIS.

It may not be generally known that this plant is quite hardy in a sheltered position out of doors in the more favoured parts of the country.

In the Cambridge Botanic Garden it forms a bold clump 4 feet in diameter and 8 feet high, and flowers well in October or November. The herbaceous stems are hollow, about half an inch in diameter, well branched towards the top, and clothed with pubescent hairs. The pinnate leaves are deep green above, of a paler shade beneath, being composed of two pairs of leaflets,



[Photograph by E. P. Raffill.]

FIG. 173.—*DIERVILLA SESSILIFOLIA*, A HARDY FLOWERING SHRUB. (See p. 427.)

youngest portion of the central axis drooping gracefully and giving one the pictorial aspect of *Spiraea Aitchisonii* or *Lindleyana*, but in pure white. I have recently seen groups 5-6 feet high, some arranged with the rank and file of border plants, others by the waterside but with no excess of moisture at the root, and their behaviour and rare beauty in this, the first trial planting, is distinctly promising. In the Glasgow Botanic Gardens, where soil and atmosphere are charged with gases deleterious to plant-life, this *Artemisia* thrives well, and in the purer air and better soil of country gardens specimen plants of merit are the rule. The flowers have no great value in a cut state; the

which are obcordate mucronate in shape, and full of pellucid dots on the under surface.

The stipules are interesting botanically, each successive pair affording protection to the growing point. They are kidney-shaped, about an inch across, somewhat membranous, and veined with purple, especially towards the base.

The flowers are papilionaceous, and are borne about four together on somewhat slender stalks towards the ends of the branches. They are bright yellow in colour, the keel and the two wings being splashed with reddish purple on the inside.

This Mexican plant is ornamental in a position where it will grow luxuriantly. *E. J. Allard*.

DIERVILLA SESSILIFOLIA.

AMONG hardy shrubs, the Diervillas or Bush Honeysuckles as they are commonly called are amongst the most floriferous and beautiful, their pretty, sweet-scented flowers and ample rich green foliage placing them in the front rank of desirable shrubs for garden decoration. About eight species are in cultivation, of which *D. florida*, better known in gardens as Weigela rosea, was introduced as long ago as 1844, and which, apart from its beautiful free-flowering habit, appears to thrive in almost any kind of soil, provided it is planted in a sunny position. Several other species are very showy, such as *D. floribunda* and *D. grandiflora*, and these three species have been used in the production

Sons, of Chelsea, exhibited several flowering growths at a meeting of the R.H.S. on June 29, 1897, one of which was illustrated in the *Gardeners' Chronicle* for July 10 (now reproduced). To succeed with this species it requires somewhat different treatment than the rest of the genus, as it produces its flowers from the ends of the shoots of the current season growth at the end of June and early part of July—at which period there are fewer shrubs in flower—and therefore this species, if not so showy as others, is valuable on this account. The plants should be cut hard back each spring, so as to induce the production of numerous shoots from the base, as it is from these that the flowers may be expected later on in the summer.



FIG. 174.—FLOWERING SPRAY OF DIERVILLA SESSILIFOLIA: FLOWERS YELLOW.

of many beautiful hybrids, several of which, such as *Eva Rathke*, *Abel Carrière*, *candida*, and *Van Houttei*, are well known in gardens. These hybrids and their parents flower for the most part from short leafy shoots, which are produced from the ripened wood made during the previous year, and for this reason any pruning they may require should be done immediately their flowering season is past, which is usually about mid-summer.

Another species, which differs altogether in habit from the preceding, is *D. sessilifolia* (see fig. 174), which, as may be seen from the accompanying illustration, is also a free-flowering plant. Some attention was paid to this species some 10 years ago, when Messrs. J. Veitch &

The flowers are produced in axillary or terminal cymes, clustered together at the ends of the shoots. The calyx is slender, elongated, about $\frac{1}{2}$ inch long, narrow below, the limb with five linear lobes. The corolla is light yellow, nearly 2 inches long and $\frac{1}{2}$ inch broad, narrowly funnel shaped, with a slender tube and a nearly regular five-lobed limb. Stamens five, inserted on the corolla, anthers linear. The leaves are opposite and decussate, elliptic or elliptic-ovate, sessile on the upper parts of the shoot, shortly petiolate on the lower, finely serrate, often as much as 8 inches in length and 3 or 4 inches in breadth, and of a light pea-green colour.

It is an inhabitant of the mountains of Carolina and Tennessee, and was introduced into cultivation in this country in 1889. *C. P. Raffill*.

THE FERNERY.

THE GENUS ACROSTICHUM.

THE Ferns included by Hooker and Baker in this genus when compiling the *Synopsis Filicum* are extremely varied in habit. Several are not more than a few inches in height, while others, when growing luxuriantly, attain to large dimensions. Notable amongst the strong-growing kinds are *A. aureum*, which is frequently seen 6 feet or more in height. When we consider how diverse in character the plants are, it is not surprising that the species at present comprising the genus were divided by earlier botanists into at least a dozen genera. Fortunately, many of these names have disappeared from gardens. The old names, however, are usually included as synonyms when dealing with individual species, so that those who cultivate them under the old names may easily recognise their plants. The sori in some of the species is spread over the entire under-surface of the fertile fronds; in others it is disposed only on the under-surface of the upper leaflets, while in some instances it spreads over both surfaces. The fronds of *Acrostichum* are very diverse in character, some being simple or entire, others divided partly, or entirely to the midrib, and a few doubly pinnate. In many instances the fronds bearing the spores are very distinct from the others on the plant. The great majority of the species are natives of tropical and a few of sub-tropical regions.

CULTIVATION.

Most of the species require to be cultivated in the warm greenhouse or stove. Their diverse habit of growth fits them for use in a number of ways. Those with rhizomes can be utilised for clothing bare walls and pillars, or hiding unsightly corners in the house. Some of the plants climb or spread over the ground by means of roots, produced from the stems in a similar manner to Ivy. Such species include *A. acuminatum*, *A. Caenopteris*, *A. osmundaceum*, and *A. scandens*. Several with naturally half-drooping fronds are admirable subjects for furnishing hanging baskets and pockets. Baskets made of some durable wood as Teak, for instance, are preferable to wire.

Acrostichums being mostly shallow-rooting plants, are often cultivated in shallow pots or round pans about half the depth of an ordinary pot. In these receptacles there is not need for so much drainage material, although even in pans plenty of material must be given to ensure perfect drainage. Another reason in favour of pans is that with the smaller growing kinds, when they increase in diameter, and are put in larger pots, even though they may be splendid specimens of the plant, they look anything but pleasing with so much pot beneath. For most of the species the following mixture forms a suitable compost:—2 parts fibrous peat, 1 part leaf-mould, and 1 part coarse sand and broken sandstone; pieces of the latter may be left as large as hazel nuts, to assist in making the soil thoroughly porous, as, although they require an abundance of moisture at the roots in summer, the majority are very impatient of anything approaching stagnation. For the strong-growing kinds, of which *A. aureum* and *A. scandens* may be cited as examples, add 1 part fibrous loam to the compost recommended.

Keep the atmosphere of the house humid. Syringe the plants several times on bright days avoiding, however, those with woolly leaves, as although it does the plants no harm, the water spoils the appearance of the fronds.

SELECTION OF SPECIES.

Nearly 200 species of *Acrostichums* have been described; many of these, however, are not in cultivation. At Kew there are 40 species and 10 geographical varieties. Those enumerated below are the most interesting and decorative members of the genus.

A. ACUMINATUM (SYN. *POLYBOTRYA ACUMINATUM*).—A Brazilian species with thick rhizomes, this plant is useful as a basket plant, for covering bare walls, or twining round the stems of tall Tree Ferns. The semi-drooping fronds are bi-pinnate, 18 inches to 2 feet in length, 1 foot in width, tapering upwards, rich green in colour. The fertile fronds are tri-pinnate, about half the size of the barren fronds. The stipe (stalk) is thickly clothed with scales.

A. AUREUM (SYN. *CHRYSIDIUM AUREUM*).—This is a common species in tropical and sub-tropical countries, and grows in swampy districts. It is a vigorous plant which, when fully developed, attains a height of 5 to 7 feet, forming an erect stem, which with age resembles a short Tree Fern. The fronds are pinnate, the leaflets 8 or 9 inches long and 2 to 3 inches broad, rich green in colour. The spores are produced on the upper pinnæ of some of the fronds. The plant requires much water, and, therefore, the best specimen at Kew is growing in the Water Lily house, the lower portion of the pot being stood in the water.

A. BURCHELLII (SYN. *ELAPHOGLOSSUM BURCHELLII*).—This plant has a short, woody rhizome covered with brown scales; the fronds are glossy green colour, entire, sub-corriaceous in texture, 1 foot to 18 inches in length, and 1 inch in width. The fertile fronds are not so large as the barren ones; the fructification entirely covers the underside of the fronds. It is a native of Brazil, and should be cultivated in the greenhouse.

A. CAENOPTERIS.—A vigorous-growing Mexican plant, suitable for the greenhouse or intermediate house. The thick rhizomes are covered with brown scales, fronds 2 feet to 3 feet in length, pinnate, fertile fronds narrower, and bi-pinnate. This is a useful species for covering bare walls, the rhizomes being capable of growing quickly.

A. CERVINUM.—A tropical American species long cultivated in gardens as *Olfersia cervina*. The fertile and barren fronds are very distinct. The former are bi-pinnate, the pinnules being entirely covered with sporangia. The barren fronds are pinnate, 2 feet or more in length, pale green in colour, the rhizomes and stipes clothed with light brown scales. A useful plant to grow in hanging baskets or in pockets.

A. CONFORME (SYN. *ELAPHOGLOSSUM CONFORME*).—A small growing species seldom exceeding 9 inches in height, widely distributed in tropical and sub-tropical regions. The fronds are entire and about 1 inch broad, glossy green in colour. It succeeds in the cool fernery.

A. CRINITUM.—This plant will be more familiar to gardeners under the name of *Hymenodium crinitum*. It is the handsomest species of the whole genus, and one of the most distinct Ferns in cultivation. The barren fronds are entire, thickly studded with brownish-black hairs, somewhat leathery in texture and broad-oblong, 12 to 18 inches long, 6 to 9 inches broad; it has been given the name of the "Elephant's Ear Fern," owing to a slight resemblance of the frond to the ear of that animal. In shape the fertile fronds resemble the barren ones, but are rather smaller and have a longer stipe. A native of Central America and the West Indies, the plant is said to have been first introduced to this country in 1793. A spongy compost similar to that used for *Platyceriums* is the most suitable, namely, fibrous peat, half-decayed leaf-mould, sphagnum-moss, charcoal, and broken sandstone or coarse sand.

A. CUSPIDATUM is found wild from the West Indies to Peru. The barren fronds are from 1 to 2 feet long, the upper surface comparatively smooth, and the underside thickly matted with rusty brown scales, the fertile fronds rather smaller than the sterile ones.

A. DECORATUM.—A handsome species from West Indies, Brazil, Peru, and Guiana. The stout rhizomes are clothed with brown scales. The barren fronds are from 1 foot to 18 inches in length, leathery in texture, and the margin and midrib are studded with brown scales, fertile fronds similar in shape, but slightly smaller.

A. DRYNARIOIDES.—A stove species, native of Penang, Solomon Isles, and New Guinea. The fronds are distinct in appearance, having no stipe. They grow fully 3 feet in height and 1 foot in width. The sori are produced on the upper portion of some of the fronds.

A. FLAGELLIFERUM (SYN. *GYMNOPTERIS FLAGELLIFERA*).—This is an Indian species, requiring stove treatment. The fronds are 1 foot or more in length, comprising two or three pairs of pinnæ and a terminal much elongated one. The spores are produced on the ends of a few fronds.

A. LATIFOLIUM (SYN. *ELAPHOGLOSSUM LATIFOLIUM*).—The species is widely distributed in tropical countries. The shining, green leaves are entire, 1 foot or more in length, upright in growth, with a distinct leathery appearance. The following are considered by botanists to be geographical forms of this species:—*angustifolium*, Tropical America; *callæfolium*, Java; *crassinerve*, Brazil.

A. OSMUNDACEUM (SYN. *POLYBOTRYA OSMUNDACEUM*).—An inhabitant of the forest of Tropical America, this plant is very robust in growth. The thick rhizomes make rapid progress trailing over a rockery, clinging to damp walls or trailing round pillars and tall Tree Ferns. The barren fronds are tri-pinnate, dark green in colour, 18 inches in length, 9 inches broad at the base. The fertile fronds are about the same size, and wholly covered with sporangia.

A. PELTATUM (SYN. *RHIPIDOPTERIS PELTATA*).—This is a charming little West Indian species, with small fan-like fronds. It grows 3 inches to 4 inches in height, and reminds one somewhat of a miniature Palm; the fronds are several times dichotomously divided. The plants should be grown several together in shallow pans to obtain its full beauty. A suitable compost consists of equal parts leaf-mould and peat, adding plenty of sand. Insert here and there over the surface of the pan pieces of sandstone to form an uneven surface over which the rhizomes will grow. As the plants thrive in a moist atmosphere, it must be grown in a house where such conditions prevail. A botanical variety named *gracillimum*, found in Brazil, has rather larger and more divided fronds.

A. QUERCIFOLIUM (SYN. *GYMNOPTERIS QUERCIFOLIUM* AND *A. NEITNERII*).—This interesting Fern is found in Tropical Asia, notably in Ceylon and Southern China. The barren fronds resemble very much an Oak leaf in appearance, hence the specific name. These are almost prostrate, 3 to 4 inches in length. In direct contrast to these, the fertile fronds grow erect, being, when mature, about 6 inches in height, the pinnæ is contracted and covered with sporangia.

A. SCANDENS (SYN. *STENOCHLAENA SCANDENS*).—This is the freest-growing species of the whole genus under cultivation. Planted out in a fernery, where the temperature is not allowed to fall below 50° F. at night in winter, the rhizomes ramble about in all directions. The barren fronds are rich green in colour, 4 feet to 6 feet long, simply pinnate. The pinnæ of the fertile fronds are much contracted. It requires plenty of water, the plant having no resting season, the rhizomes growing and pushing up vigorous young fronds throughout the year. It is found wild in Asia, Queensland, and Fiji.

A. TOMENTOSUM (SYN. *ELAPHOGLOSSUM TOMENTOSUM*).—This is a stove species, native of the

Bourbon Islands. The plant has a distinct and striking appearance, the stipes and fronds being clothed with narrow, light-brown scales. The long, tapering fronds are 2 feet to 3 feet or more in length. Allowed to grow for several years without dividing, this species will make a good specimen plant. *A. O.*

EUPATORIUM AGERATIOIDES.

It is not often one finds effective use made of this old-time plant from North America; albeit, it is the best of its group, and is an attractive plant when most herbs are preparing for the winter's rest. It is distinctly easy to accommodate, hence one may group it among shrubs or in the wild-garden; it has, however, special claims upon those who plant water-gardens. July and August are practically water-garden months, after which there is but little of value or attractiveness in such gardening. This Hemp Agrimony is at its best in September, and one may suggest it be used freely in clothing the banks of streams and in bold groups in the bog-garden. The plant exceeds a yard in both height and diameter, and it produces a perfect mound of white, the flowers being so closely arranged that the leafage of the upper portions of the stems becomes completely hidden. It has one defect that timely staking alone can correct—the stems are very brittle and will snap off if the inflorescences are laden with rain-drops and are not supported. A grouping of half-a-dozen plants, whose main stems are rigidly staked and whose lesser growths are allowed to hang as they will and dip to the water's edge, has for many weeks been a feature on the banks of an old ditch of considerable breadth. *Polygonum polystachyum* in full flower beside it was hardly more beautiful. If such a small group as this can attract, how much the more effective would 20 to 30 plants be on the margin of a large lake! The species may be propagated readily by cuttings inserted in spring. *G. B. Mallett.*

THE ROCK GARDEN.

CORYDALIS CHEILANTHIFOLIA.

EDINBURGH Botanic Garden affords a capital object-lesson in the effective grouping of this new Fumitory in the rock-garden, and one can appreciate it the more because this plant is likely to naturalise itself freely on any moist, rocky slope, and should, in course of time, prove invaluable to sow on rocky outcrops of any magnitude. It is a very beautiful plant—the tiny seedling is pretty and the adult flowering specimen very effective. The leafy rosette is reminiscent of many Filmy Ferns, and extends to 18 inches in diameter. The pale green colouring of the newly-formed leaves, the deeper green of the largest ones, and the yellow tint of the spent ones combine to render this species attractive at all times. The flowers do not call for any especial comment; they are not so big as those of *C. nobilis*, but are quite "in keeping" as regards size and elegance with the leafage, are yellow as regards colouring, and with attenuated hoods or spurs. The Edinburgh plants furnished the rocky walls of a dug-out footway; some had a free root-run of soil, others thrive in small cracks and fissures in the formation. The impression was that of an Irish, Scottish, or Welsh Ferny glen—the plants so closely resembled Ferns in their manner of growth. There are many gardens in the south-west in which natural rocky outcrops are abundant; to the owners or custodians of such I can commend *Corydalis cheilanthifolia* as a plant that will beautify these positions in the most effective manner. Seeds of this species germinate readily, and growth is always rapid. *G.*

COLONIAL NOTE.

CANE AND BEET SUGAR.

THE great extension of the Beet-growing area in Europe during past years under the bounty system which has prevailed in many continental countries, the large increases in the Beet sugar imports into England during this period, and the consequent falling-off in cane sugar imports from the British West Indies and other cane-growing colonies, are dwelt upon at considerable length in the recently published Volume VII. of the *Report of the Tariff Commission*. It is pointed out that in 25 years the German area under sugar-Beet has nearly trebled, while the Belgian area has nearly doubled during the same period; the Austrian area has more than doubled in 20 years, and the French acreage has increased 10 per cent. Not only do these European countries now produce the greater part of the sugar consumed in the

produced in Jamaica is of the annual value of £6,000 indicates the importance of Lime cultivation in this latter island. The Lime does very well in Jamaica, flourishing in dry districts and on poor soils. Much of the Lime juice exported is the produce of trees grown in the ordinary cattle pastures, and in consideration of this it is pointed out in an article in the *Journal of the Jamaica Agricultural Society* that Limes and their products should form a much more prominent item than they do at present in the agricultural exports of the island, as it is stated that there is plenty of ordinary pasture land in Jamaica possessing a red soil well adapted for Citrus fruit cultivation, on which Limes could be profitably grown as a perennial "catch crop."

JAMAICA RUM.

The following order, which, says the *Agricultural News*, Bridgetown, Barbados, should operate to the advantage of rum manufacturers

a company has secured a large area at Toatal, near Passacoa, for the cultivation of Pine-apples and Bananas for supplying the home market. An experienced energetic manager well acquainted with West Indian conditions has been secured.

FRUIT TREES FOR NORTH WALLS.

WHILE the planting season is still with us, it should be remembered that a north wall may be put to other uses than that of supporting Morello Cherries. This is always a valuable crop, though there are cases where a greater variety would be preferred. Perhaps one of the greatest essentials in getting trees to thrive and prove fruitful against a north wall is in forming a suitable border. In most instances the soil at the foot of a north wall is cold and sluggish. Before any attempt is made to plant the trees the soil should be wheeled out to the depth of 2 feet, and of sufficient width to allow the trees a fair start, adding to it piecemeal as the roots extend. A suitable drainage medium can be afforded by placing a layer of broken bricks in the bottom of the trench, refilling the latter with fresh loam, to which has been added a fair amount of old lime and wood ashes. This will ensure porosity and, consequently, warmth. It is advisable to keep the newly-formed border slightly higher than the surrounding ground. Having, however, made these preparations, it would not be practical to attempt the growth of Peaches, Nectarines, Apricots, or Figs, as each of these succeed best in full sunshine; but I have succeeded very well with Pears, Plums, dessert Cherries, Gooseberries, and Red Currants.

I have grown heavy crops of fine stewing Pears on a north wall, and these are always welcome, while the cool aspect, especially during very hot summers, has proved very suitable for obtaining fine fruits of the Jargonelle Pear. Late supplies of Red Currants and Gooseberries are also appreciated, and in no other way can the fruits be retarded so well, or more easily protected from birds. Suitable trees for the purpose are those having several clean, straight, leading growths. The latter should be trained upright, those of the Gooseberry from 4 to 6 inches apart, allowing a little more space for the Currants, owing to their broader foliage. The leaders should be encouraged to reach the top of the wall, but in such a way that each becomes furnished with fruit spurs from base to summit. This is easily secured by keeping breast and side shoots pinched-in.

Pears should be planted as single cordons, in preference to using one or two spreading specimens. A greater variety can thus be cultivated on a given space. The space can be covered more quickly; a tree can be easily replaced if necessary, and good crops of fruit secured in the least possible time. Dessert Cherries may be treated in the same manner. Under good management, north walls may—if not shaded by trees—be put to varied and profitable uses. R. P.

CARNATION ARISTOCRAT.

At the meeting of the Royal Horticultural Society on the 10th inst., a new variety of Carnation named Aristocrat (see fig. 175), of American origin, was shown by Messrs. Hugh Low & Co., Bush Hill Park, Enfield. The colour is a shade of pink, deeper than in the well-known variety Mrs. T. W. Lawson, and the flowers have rather better form. At the recent exhibition of the Winter-Flowering Carnation Society, Aristocrat was awarded the 1st prize in a class for a deep pink or rose-coloured variety. Aristocrat is said to be much appreciated in America.



FIG. 175.—CARNATION ARISTOCRAT: COLOUR ROSE-PINK.

British Islands, but the larger portion of the Beet sugar imports consists of refined sugar, which means that the British sugar-refining industry is being pushed out by foreign competition. With respect to the importation of raw cane sugar from the West Indies to Great Britain, the figures given show that the shipments are little more than one-third of what they were 20 years ago. In 1885, as much as 1,400,000 cwt. of sugar were sent from these islands to England, while in 1903 the quantity had fallen to 450,000 cwt. The English imports from British Guiana fell from 1,300,000 cwt. to 220,000 cwt. in the same period. *Agricultural News (West Indies)*, November 16.

LIME CULTIVATION IN JAMAICA.

ALTHOUGH Dominica and Montserrat are regarded as the headquarters of the Lime industry of the West Indies, yet the fact that the Lime juice, citric acid, and essential oil

in Jamaica, has recently been issued by the English Board of Customs, after communication with the Colonial Office:—"The Board direct that rums imported from Jamaica, or admitted as being of Jamaica origin, are to be entered in the accounts, and on all relative documents, including permits, as 'Rum from Jamaica.' Care is to be taken that this description is not applied to rum from Jamaica which has been blended with rum of other origin." The effect of this order is to differentiate Jamaica rum from all other rums, so that a separate entry will be required for it at import. In future it will be impossible to blend Jamaica rum in bond with other cheaper rums, and describe the resulting mixture as Jamaica rum.

NORWEGIAN FRUIT PLANTATIONS IN THE WEST INDIES.

The Norwegians have recently entered into commercial enterprise in the island of Cuba, and

SEED AND SOIL INOCULATION.

(Concluded from page 416.)

THE beneficial effects of inoculation already mentioned, namely (1) increase of the yield of the crop, and (2) increase of the fertility of the soil, have long been known and appreciated, but recent experiments have shown that two other important advantages may result from the successful inoculation of a crop. These are:—

(3) Increase of the feeding value of the crop owing to the increase of the nitrogenous contents of the inoculated plants; and

(4) Earlier maturing of the crop, thus allowing of earlier marketing of the produce.



FIG. 176.—NODULES ON ROOTS OF ALDER.

A series of experiments conducted at King's College during 1906 demonstrated that, even when weights are equal, the inoculated crop is more valuable than the non-inoculated, because of the increased nitrogen contents. Tares were grown in sterilised soil to which the requisite potash and phosphate salts were added. To one set of pots nitrate of soda was added proportionate to 2 cwt. per acre; the other set of pots was inoculated. At the end of the season equal weights of produce from each set were taken and analysed for their nitrogen contents, with the following results:—

Tares, with nitrate of soda, 1.92 per cent of nitrogen.

Tares, inoculated, 3.07 per cent. of nitrogen.

Thus the inoculated Tares contained 50 per cent. more nitrogen; that is, were half as rich again in feeding value compared with those grown with nitrate of soda. The importance of this increase in feeding value when leguminous crops are grown for feeding stock is obvious.

As regards earlier maturing of the crop, one of the most striking facts brought out by the experiments during last season was the number of cases in which inoculation hastened the maturing of the crop. With early crops this means earlier marketing of produce and

enhanced prices, a matter of the greatest importance to growers. A large grower in Cornwall reports:—"The Peas were a great success. Inoculation of soil and seed returned a good 30 per cent. more than only seed inoculation, and the seed inoculation showed a good 20 per cent. better crop than the farmyard-manured Peas. Inoculation in both cases rendered a fortnight earlier marketing possible over the manured." Another grower from Norfolk says:—"The inoculated Peas were three weeks earlier for market and decidedly 50 per cent. more prolific than the non-inoculated." One of the most surprising results in this connection comes from Guernsey, where a large firm of growers reports on inoculation of Kidney Beans under glass as follows:—"The Beans were grown with the material you were kind enough to send us, and we may say that we have never had a better and earlier crop. The seeds came up very strong, and the leaves had a nice dark colour. We picked the first Beans and sent them to market six weeks after sowing."

To anyone who reads of the wonders worked by seed and soil inoculation, the question naturally arises, "How is it done?"

Well, the method is simplicity itself. Three small packages and a gallon of water are sufficient to inoculate seed for 10 acres, or will inoculate one to two acres of soil. The contents of package No. 1 (nutrient salts) are dissolved in one gallon of water, then the contents of No. 2 package (the bacterial powder) stirred in; after 24 hours the contents of No. 3 package (nutrient salts) are added and the mixture allowed to stand until it turns cloudy, when it is ready for use. To inoculate seed, the cloudy culture solution is sprinkled on the seeds, the seeds then allowed to dry, and planted in the ordinary way. To inoculate soil, it is best to dilute the gallon



FIG. 177.—ROOT OF TARE INOCULATED FROM A ROOT OF ELÆAGNUS.

of culture solution with 50 gallons of clear water, and then water the plants with it. This double inoculation will, of course, give the best results.

Considering the importance of the root nodules to leguminous plants, it is not surprising that numerous attempts have been made by botanists to induce the formation of similar

nodules on non-leguminous plants. Unfortunately these nodules are only found naturally in four other orders of plants, namely, Alder (see fig. 176), Elæagnus, Podocarpus, and Cycas, and all attempts to produce them on other plants have hitherto been unsuccessful. During the past summer, however, a number of inoculation experiments have been made at King's College on non-leguminous plants, with, in many cases, most gratifying results. For example, it has been found possible to cultivate a special race of nitrogen-fixing bacteria in Tomato root extract, and prepare therefrom a culture solution which, when sprinkled on the roots of Tomato seedlings, caused them to grow much more vigor-



FIG. 178.—EFFECT OF INOCULATION ON A TOMATO PLANT.

ously. Fig. 178 shows the effect of such inoculation, and it is interesting to note that in this experiment the inoculated plants were the only ones to ripen their fruit this season. Strawberries similarly treated produced 45 per cent. more fruit, and the fruit was ripe ten days earlier than the non-inoculated. Tares have also been successfully inoculated from the roots of Elæagnus (see fig. 177). Experiments on Wheat and Barley also were most promising. There is no doubt much work yet to be done in the realm of soil bacteriology; but the results already obtained promise still greater results in the near future, and no horticulturist can afford to remain in ignorance of, or ignore these agencies in the soil. W. B. Bottomley.

STREET TREES.

THE cry for re-afforestation has not been in vain. It has brought about a Government scheme and other valuable experiments; it has also created a demand for trees in dreary town streets. Every little town now begins to dream of its boulevards, and on every hand we hear of decisions of town councils to plant trees to mask the hideousness and meanness of their streets. The decision to plant usually goes through unanimously, and then comes the question "What shall we plant—Limes, Chestnuts, Planes?" It is almost certain to be one of these. London plants them; therefore we must, even with the pure air of the country. A councillor more enlightened than his colleagues, as a result of a week on the Continent, suggests a change, and perhaps it is quite new to English ideas. In most councils he is voted down; in others his suggestion, backed by work from his Kodak, is acted upon, and the order goes forth that "Queen Street" is to be planted with, say, *Acer dasycarpum*. Now comes the disappoint-

ment. There has never been a demand for these; therefore there is no supply, and Queen Street has after all to be planted with Limes, which make a fearful mess on the paths in the spring, and are leafless by the end of summer.

Nurserymen and others will protest at this, but I am not writing without experience. I have 60 miles of new roads to plant within the next few years. I have 24 streets planted with 24 kinds of trees, but they were not purchased in England because I was unable to obtain suitable trees at home. I hold dozens of letters to this effect: "We are sorry we have not suitable trees in stock of the varieties you ask for, but have a grand stock of Limes, Chestnuts, and Planes, which we can thoroughly recommend." Often I get also the advice: "The trees would certainly not thrive in streets." What will thrive in a German factory town will thrive in an English town, and if "town foresters" would insist on having the trees they ask for, the supply would soon be forthcoming. Chestnuts and Limes are able to withstand the trying conditions of smoky towns, but otherwise few trees are more unsuitable, owing to their sensitiveness to drought. The beautiful Champs-Élysées avenue of Chestnuts in Paris was this year leafless by August. October saw many of the shoots with flowers and new leaves. January will see these new growths dead and unsightly.

As a rule, the street tree has a disastrous drought to face in the summer, and therefore in selecting the varieties this must always be carefully considered.

In Germany there are hundreds of acres devoted to the preparation of street trees; in England I have not found an acre. I have found hundreds of acres of standard trees growing for sale, but none properly prepared for planting in streets.

Paris raises her own trees on waste land used as a "shoot" for her street refuse. Every town has such land lying idle. Why not follow the example of Paris, and raise our own trees?

Street trees must not only be grown, they must be specially prepared for the purpose. Briefly, the following is the German system of preparation:—A single lead is run up to form the stem. When it attains a height of 6 feet, it is headed back in the winter to 5 feet. The next year the new lead is headed back to 6 feet, and so on foot by foot to 12 feet to 14 feet, at which size the tree is put on the market perfectly formed, every branch in its place, a clean stem of 8 feet topped by a symmetrical head.

Of course, we head back in this country—or profess to do so. But here is the secret of the German's fine centre leading growth to each tree. When we head back the lead we cut to immediately above the bud selected for the new lead. The German cuts as far above the bud as he can without including the next one. During the winter the wood dies back to the top bud, leaving about 2 inches of dead shoot. When the new lead is about 6 inches long, it is carefully tied to this natural stake, and so given a good start in the right direction. Examination of a tree thus prepared will show the value of this little detail. Of course, the tree is also transplanted every second year.

Another detail neglected too often in our preparation is attention to the thickening of the stem. It is well known that the more leaves a tree has the more wood it forms, and with this fact in mind the stem is allowed to form spurs for several years for the sole purpose of supplying leaves to produce new stems. These spurs are gradually removed by clean cuts, after which the wounds heal quickly.

Every year the heads are carefully pruned and balanced, and when the trees go into the streets they have perfectly clean stems running through the centre, and are not mere crooked sticks, with a few forks on the top, such as

have been planted for street trees in a new street not a hundred miles from the Strand. It may interest town gardeners to know that I have a street of each of the following species in a town 40 miles north of London:—*Robinia Pseudo-acacia*, *R. Bessoniana*, *Tilia europea*, *Betula alba*, *Pyrus Aucuparia*, *Æsculus Hippocastanum*, *Prunus Pissardi*, *Populus Bolleana*, *Quercus rubra*, *Fraxinus alba*, *F. monophylla*, *F. Ornus*, *Juglans nigra*, *Fagus sylvatica*, *Ailanthus glandulosa*, *Cytisus Laburnum Adami*, *Pyrus communis*, *Amygdalus communis*, *Cratægus Oxycantha*, *Charles X.*, *Acer Reitenbachii*, *A. Schwedleri*, *A. dasycarpum*, and *A. digitatum aurea marginata*. I have eight new streets to plant this winter, and must go out of the country for the trees. *Pem.*

FLOWERING PERIOD OF APPLES.

THE following table shows the dates on which 26 varieties of Apples came into flower this year, also the lowest atmospheric temperature for every night in April and May, indicating what amount of frost occurred during the flowering period. My dates were taken when there were from 10 to 15 flowers expanded on each tree.

The following varieties bore by far the most satisfactory crops of fruit: James Grieve, Braddick's Nonpareil, Washington, Grenadier, Bismarck, Emperor Alexander, Cellini Pippin, Newtown Pippin, Worcester Pearmain, Gloria Mundi, Gravenstein, Lady Sudeley, and Peasgood's Nonsuch. The other varieties mentioned in the table bore fruit with one exception, this being Charles Ross. They are all single cordons, planted on a square piece of ground (I have not included any that are planted against a wall).

James Grieve and Braddick's Nonpareil, although they were the first to come into flower, withstood frosts better than any others; the fruit set so thickly that they had to be heavily thinned; very little thinning was done to any other sorts. No protection was afforded whatever.

I do not recommend early-flowering sorts; quite the contrary. Late-flowering varieties are most required, as these may escape injury from frost. If we could get some good varieties raised from the never-failing Court Pendu Plat, owing to its lateness in flowering, we could depend on a better average English crop of Apples.

DATE OF FLOWERING.

April 16.	Braddick's Nonpareil.	May 1.	Lady Sudeley.
" 17.	James Grieve.	" 2.	Gravenstein.
" 21.	Fearn's Pippin.	" 4.	Gloria Mundi.
" 21.	Baummann's Reimette.	" 5.	Allington Pippin.
" 22.	Grenadier.	" 6.	Worcester Pearmain.
" 22.	Washington.	" 6.	Cox's Orange Pippin.
" 22.	Bismarck.	" 6.	King of Tompkins County.
" 22.	King of Pippins.	" 6.	American Mother.
" 23.	Emperor Alexander.	" 7.	Peasgood's Nonsuch.
" 23.	Hambling's Seedling.	" 7.	Newtown Pippin.
" 24.	Cellini Pippin.	" 7.	Newton Wonder.
" 26.	Blenheim Pippin.	" 7.	Gascoyne's Scarlet.
" 26.	Ribston Pippin.		
May 1.	Charles Ross.		

LOWEST TEMPERATURES AT NIGHT.

April 1	26°	April 22	37°	May 12	32°
" 2	32°	" 23	35°	" 13	37°
" 3	31°	" 24	36°	" 14	32°
" 4	36°	" 25	40°	" 15	34°
" 5	34°	" 26	38°	" 16	35°
" 6	30°	" 27	34°	" 17	36°
" 7	35°	" 28	28°	" 18	30°
" 8	32°	" 29	34°	" 19	27°
" 9	34°	" 30	33°	" 20	25°
" 10	32°	May 1	32°	" 21	36°
" 11	30°	" 2	34°	" 22	37°
" 12	32°	" 3	40°	" 23	40°
" 13	35°	" 4	40°	" 24	34°
" 14	35°	" 5	41°	" 25	38°
" 15	32°	" 6	42°	" 26	36°
" 16	36°	" 7	40°	" 27	39°
" 17	38°	" 8	41°	" 28	38°
" 18	25°	" 9	40°	" 29	40°
" 19	25°	" 10	40°	" 30	37°
" 20	28°	" 11	34°	" 31	44°
" 21	40°				

George Kent, Norbury Park Gardens, Dorking, Surrey.

THE PROPAGATOR.

THERE are some genera the species of which may be struck from cuttings in the winter months, but in my previous articles on plant propagation, no mention was made of them. The most important ones are included in the following notes.

EPACRIS.—These showy, easily-cultivated, Australian plants, in habit resembling the Heaths (*Ericas*), but differing from them in regard to structure and form of the flower, may be rooted from cuttings of the young shoots taken, in most cases, from plants that have been afforded warmth a little higher than that of the cool greenhouse for a month or less. The cuttings should not exceed 3 inches in length. So far as they enter the layer of sand overlying the sandy peat with which the pot is almost filled, the leaves should be cut off close to the shoots with a pair of scissors. The cuttings should be forthwith put into the pots already prepared for them, dibbling them in circles at 1 inch asunder (a thumb pot being sunk in the centre, the better to ensure good drainage), and they must be covered with a bell glass after the lapse of an hour or two. The chief point to observe in this winter propagation is that the soil in the pot does not become too moist, a condition that may only be obtainable by affording ample drainage materials and plenty of sand in the peat. At the same time the soil must not be allowed to become destitute of moisture. The bell glasses require to be wiped out occasionally with a dry cloth. The *Epacris* may be afforded warm greenhouse treatment, that is, a temperature of 45° by day and 55° by night, and the more nearly these temperatures are adhered to the greater the chances of success. Most of our present-day varieties in cultivation are crossbreds, of which *campanulata*, *coccinea*, *refulgens*, and *impressa*, are the species mostly employed by cross-breeders as the parents. Seeds are only obtained by careful fertilisation of vigorous plants, and the seeds should be sown as soon as they are ripe.

ERICAS.—As with *Epacris*, the best varieties of *Ericas* are of cross-bred origin, and the method of making the cuttings, the kind of soil used, the drainage of the pots, rooting the cuttings, and general management are identical with those required in the former case. It is a distinct loss to our greenhouses that *Ericas* should be so little grown at the present day, and that the varieties that are to be found in gardens are so few in number. Especially beautiful are the species *E. tricolor*, *E. ventricosa*, and *E. vestita*, which have given rise to many varieties of much beauty. *Diosmas*, *Pimeleas*, *Polygalas*, *Correas*, *Pittosporums*, and *Abelia* may be struck from cuttings at this season, making use of a sandy, peaty soil and good drainage, with a 1-inch layer of silver sand over all. After affording water to settle the sand about the cuttings and to moisten the soil throughout, when the leaves have become dry cover with bell glasses, and set the cutting pots in a frost-proof pit, giving a moderate quantity of water whenever the soil has become dryish. Shading with a piece of paper may be needed in bright weather. *F. M.*

TREES AND SHRUBS.

PINUS PINASTER.

In a young state this is one of the most ornamental of the Pines, and also one of the fastest growers, being equal in either respect to *P. insignis*, while it also possesses the merit of being much hardier than the latter species. It is a native of Southern Europe, but has been introduced into nearly every temperate or sub-tropical country in the world, and is equally at home at the Cape, or in New Zealand, as it is in the Mediterranean littoral. With age it attains a height of 60 feet to 80 feet, or even more, forming a clean, straight trunk usually

topped with a rounded and flattened head. The trunk is covered with a coarse, deeply-ribbed bark, and somewhat resembles the Weymouth Pine in that it does not taper so much towards the top as some of the other Pines do, but maintains a fairly uniform diameter throughout the greater part of its length. Its chief value, however, lies in its beauty as a specimen tree up to 30 feet or so high, when it still retains most of its lower branches. These are produced in regular whorls, evenly proportioned in length to the size of the tree, and are clothed with needles, 8 inches to 10 inches in length, of a beautiful grass-green colour on the young growths, but darker on the older wood. The needles are in pairs, stout, erect, rounded on one side, and flat or slightly channelled on the other. The buds are rather less than an inch in length, brown and pointed, the ends of the scales being loose and curling. As a timber-tree *P. pinaster* is useless; the wood being soft, it quickly decays, but its resinous products are valuable. Next to its decorative qualities, it is most serviceable as a tree for planting in shifting sands, for which purpose it has been largely used in the maritime districts of France (see *Gardeners' Chronicle*, 1871, p. 137). According to Loudon, it makes large, strong tap-roots, which, while making it a useful plant for sandy districts, renders it rather difficult to transplant. This latter assertion of Loudon's is, however, incorrect, as *P. pinaster* can be moved as successfully as *P. austriaca* or any other Pine, some plants that were moved here two years ago having made about 1 foot of growth the first year, and nearly 3 feet the second season, and that without spoiling their shape by growing too fast. For decorative purposes this Pine can be recommended as a good substitute for *P. insignis* in those districts where the latter species will not thrive. *J. C., Bagshot.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Lycaste.—*L. Skinneri* and its many varieties, including the still rare *L. Skinneri alba*, are now completing their new pseudo-bulbs, and developing flower buds. Afford copious waterings to these plants until the growths are perfectly completed. Afterwards restrict the quantity considerably, only giving sufficient to prevent shrinkage in the pseudo-bulbs. *Lycastes* grow well in the cool house, so long as the atmospheric temperature is just above 50° at night, but when it is allowed to fall many degrees below this, it is advisable to remove the plants to a cool part of the intermediate house. The plants require a light position, but during the winter their foliage must not be placed near to the roof glass. Re-potting is best done in spring. The nearly pure white *L. lanipes* is well worth growing, the flowers being delightfully scented, especially at night time. Water must now be afforded less frequently to this plant, also to such species as *L. costata*, *L. Barringtonii*, *L. leucantha*, *L. aromatica*, *L. macrobulbon*, *L. Deppel*, *L. Schilleriana*, and *L. cruenta*; all of these species should be cultivated in the cool intermediate house.

Zygopetalum. In the same cool intermediate house the following species grow freely, and when in bloom are extremely handsome plants: *Z. Perrenoudii*, *Z. Amesianum*, *Z. triste*, *Z. Wiganianum*, *Z. Mackayi*, *Z. Clayi*, *Z. brachypetalum*, *Z. Burkei*, *Z. crinitum*, *Z. Protheroeianum*, *Z. Ballii*, &c. None of these plants succeed if exposed to direct sunlight, therefore a shady corner should be set apart for them. Repotting may be carried out immediately a plant recommences to grow, and being a free-rooting subject, each plant should be afforded plenty of pot-room and a good depth of compost. The pots should therefore be filled to about a quarter of their depth with clean crocks for drainage, and good turfy yellow loam, peat, leaf-mould, with plenty of small crocks well mixed with these, will form a suitable compost. After repotting the plants, water them with great care until roots become plentiful, when copious supplies should be afforded to them. The distinct *Z. maxillare* and its variety *Gauteri*, in its native habitat, grows on the stem of a tree

Fern, and under cultivation no better substitute has been found to supersede it. Suspend the pieces of tree Fern, with the plant attached, well up to the roof glass, choosing a cool, shady position, in the same house, and never let the plant get dry at the root. *Z. rostratum*, with its nearly white labellum, is always admired when in bloom; it is a warm growing species, and should be placed in a shady place in the coolest part of the East Indian house. The rare *Z. Roeblingianum* should be treated similarly. Both plants grow best when potted in the ordinary compost of peat and sphagnum-moss, and kept constantly moist at the roots. The species formerly known as *Promenæa*, but which are now included under the genus *Zygopetalum*, are much smaller than their congeners, consequently they should be grown in shallow, well-drained pans, and suspended near the glass in the cool house, but during very cold weather a few degrees more warmth than that prevailing in the cool house is better for them. Their cultural requirements are similar to other species of *Zygopetalum*. The *Promenæas* include such varieties as *P. citrina*, *P. micropterum*, *P. stapelioides*, and *P. Rollinssonii*.

Colax jugosus is closely related to *Zygopetalum*, for it readily crosses with members of that genus. The plant should be grown in a similar manner as the *Promenæas*, but being a deeper-rooting plant than the *Promenæas*, pots are more suitable than shallow pans. *Zygopetalums*, *Promenæas*, and *Colax* will thrive very well under the treatment recommended, so long as they are kept free from insects, but from the moment yellow thrips obtain possession of the young growths, a rapid decline in vigour is sure to follow, which can be checked and finally eradicated by the usual vaporising process, or by dipping or spraying with some safe insecticide.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

The conservatory and flowering house.—The *Chrysanthemums*, which have been the principal feature in this house for some time past, being no longer effective, it is advisable to take this opportunity to thoroughly clean the interior of the structure, and re-arrange the plants. It will no longer be possible to have such a fine display of colour as was prevalent in the height of the *Chrysanthemum* season, but every effort should be made to make the house as attractive as possible during the dull days of mid-winter. After removing all flowering plants that are past their best, clear as much space as possible, and wash down all the pillars, woodwork, and glass, before bringing in a fresh lot of plants. As affording a change after the show of *Chrysanthemums*, some good foliage plants, such as *Grevillea robusta*, *Cordyline*, *Azaleas*, the hardier varieties of *Palms*, and *Phormiums*, interspersed with groups of flowering plants, will assist in making a nice arrangement for Christmas. The climbers under the roof-glass and on pillars should be thinned as far as is expedient, and this will allow all the light possible to reach the plants; but, as a general rule, the spring is a more suitable time for the annual hard-pruning that some greenhouse climbers require. When the conservatory is attached to the dwelling-house, the atmospheric temperature should be kept at a point that is agreeable, in order to encourage visitors to spend some time in the structure amongst the flowers; 55° by day, rising to 60°, would be suitable, varying a little according to the conditions prevailing out-of-doors, and allowing the heat to drop a few degrees at night. Ventilate moderately in favourable weather, and leave a "chink" of air on during mild nights in order to permit of superfluous moisture escaping, and thus keeping the air drier, and rendering the house more comfortable the following morning. The temperature recommended above will suit a wide range of plants in bloom at this season, especially if the atmosphere is kept dry. *Begonias Gloire de Lorraine* and the white variety "Turnford Hall" are universal favourites, and as very few climbers are in flower at this season, wire baskets containing both varieties, if suspended from the wires overhead, will help to give a bright and cheerful aspect to the house. Other winter-flowering *Begonias*, such as *B. Gloire de Sceaux*

and *B. nitida alba*, will also be found useful, and, with *Coleus thyrsoides*, *Eupatoriums*, *Primulas*, *Cytisus racemosus*, retarded *Lilacs*, *Azaleas*, *Lilies* (now in bloom), berried plants like *Solanums* will appear quite seasonable. *Narcissus Trumpet Major*, *Duc van Thol Tulips*, and *Roman Hyacinths*, will also help to make a good show at this season. The best effect is gained by placing batches of one plant together, and not repeating it too much, rather than by indiscriminate mixing of many species. All the plants mentioned may be kept in the temperature I have advised, providing they are prepared previously, it being advisable to gradually inure the plants to a slightly lower temperature when in bloom. It is a little difficult to manage so many species in one house; but if the main idea is to have a good show, some things may be sacrificed for the purpose. If they are only kept in the house for a short time, and afterwards transferred directly to the growing quarters, few will suffer much harm.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq., Cobham Park, Surrey.

Early Potatoes.—From tubers that were started in boxes and brought to a somewhat advanced stage previous to planting in heated frames in September, new tubers of fair size and quality are now fit for the table. If the necessary space is available, further "sets" should now be started for making additional plantings. If only occasional dishes even can be obtained, these will in most cases be greatly appreciated, and therefore afford compensation for any extra trouble. If frames are not available for the purpose, pots measuring 8 inches in diameter may be used, with moderately good results. Only a very mild heat must be applied, in either case, otherwise the growth will be weakly and useless. Great care must be exercised with regard to ventilation in order that cold draughts may be prevented, as these would be sufficient to hinder the successful culture of the crop.

Seakale.—If it is intended to force this crop on the ground where the plants have grown, it will be necessary to place *Seakale*-pots over the crowns and cover the whole with a good thickness of long litter and leaves which have been previously mixed well together. This covering must be made sufficient to exclude light and air from the crowns. Although a steady heat of from 45° to 50° is desirable, any increase on this would be detrimental, as it would cause the growths to be weak and flavourless.

Asparagus.—From crowns that were lifted at about the middle of November and placed on a well-prepared hot-bed, a good cutting of *Asparagus* is being obtained at the time of writing (December 9). The weather having been up to the present very mild, it has only been necessary to cover the frames at nights, the young growths having enjoyed full benefit of the light during the day time, which at this season of the year is not always possible. When forced under such favourable conditions, the colour and flavour of the produce are more perfectly developed than is possible when the growth is made in partial darkness.

Rhubarb.—If the roots have been lifted and exposed to the influence of the weather, they may be forced quite easily after this date, and they will give better results than any previous batches that were started earlier. As each batch of lifted roots is introduced to the forcing-house, another lot should be lifted and left on the ground until required to replace former batches when these are exhausted. To maintain a sufficient supply of roots a small portion of each clump containing a crown should be broken off and replanted as the work of lifting proceeds, and in two or three years' time these will be strong and large enough for forcing purposes.

Mushrooms.—The earliest beds will now be in full bearing, and if there is the necessary accommodation at command fresh beds should still be made at frequent intervals. From the present time onwards *Mushrooms* are generally much sought after, and, owing to the indirect way the horse-droppings have to be obtained, a bed will sometimes fail to come into bearing at its proper time; in some cases it may be a month or so later than was estimated.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Planting trees and shrubs.—In most localities the heavy rains have made the ground so wet and heavy that, unless much more suitable weather sets in, it will be wise to postpone any further planting until spring. Those trees and shrubs already planted should be occasionally examined to see that the ties are not chafing the bark. It is essential that all newly-planted trees should be kept as steady as possible, or every gale will only serve to break the new roots. The most satisfactory method of securing tall standards is by means of guying wires. The mulches applied to check evaporation from the soil around the shrubs planted early in the autumn will probably have become sodden by the rains, and will prevent air passing through it; such mulches should either be loosened or, better still, removed. Mulches containing manure should only be applied to established shrubs, and they should be lightly forked in when this can be done without causing injury to the roots.

Seeds.—During inclement weather employment can be found in sorting and cleaning home-saved seeds. Many kinds, if left too long in their pods, capsules, &c., decay, and those which show signs of mildew should receive first attention. After being cleaned, the seeds should be put in packets, and these should be inscribed with the name of seed and the date.

Ixias.—There being a danger that the early growths may be injured by frost, these bulbs are best when planted at about this time. The soil in such positions as best suits these bulbs—at the foot of a south wall or in front of a greenhouse—is usually in a workable condition at any season and of such a nature as will ensure success. The bulbs should be planted about 4 inches deep, and at 2 inches apart from each other. Groups of 9 to 12 bulbs are very effective, and although there are many named varieties to select from, mixed sorts are cheaper and well adapted for the purposes of border cultivation.

Leaves.—Now that the deciduous trees are bare, all the fallen leaves should be cleared away from the garden and taken to the rubbish yard. Unless they are likely to be blown about, those which lie in the shrubberies may be allowed to remain. A slight covering with soil will keep those near the edge in place, and there is rarely any difficulty with the leaves which lie further inwards.

Lawns.—Lightly roll the lawns on all favourable opportunities. Worm-casts often disfigure the grass at this time of the year, and unless they are thoroughly dry, any attempt to sweep them up only aggravates the evil, so that it becomes necessary to use some worm-destroyer. The laying of turf may be continued during favourable weather; should hard frost threaten, it is advisable to protect any newly-laid turf, or the frost will cause it to lift. Unless the verges are badly broken, they should not be trimmed with the edging knife at this season. The cut edge remains bare much longer than when this work is done in the spring; but any necessary clipping should be done with the edging shears.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON PATON, Esq., Norwood, Alloa, Clackmannanshire.

Early Figs.—Where these are in demand, the pot plants, having been prepared as was directed in the Calendar published in the issue for November 9, should now be plunged in a pit provided with bottom heat. The necessary degree of bottom-heat may be easily supplied by making up a bed of light, strawy manure from the stable. A Melon pit is a suitable structure in which to force Figs. The depth of the plunging material should be made 18 inches at the least. This natural heat will cause the Figs to start into growth, and the embryo fruits will not be likely to drop off. After the trees have started well into growth, they will need a bottom-heat not exceeding 75°, and an atmospheric temperature of 60° by day and 50° at night. When the sun is shining on the house, maintain a humid atmosphere by damping the paths, &c., or red spider will soon put in an appearance; but a considerable amount of atmospheric moisture will be supplied from the plunging material. The cultivator must rigorously prevent extremes

of fire-heat when starting Figs, and be careful in the application of water to the roots, always using water which has been heated to the same temperature as the bottom-heat in the pit. Plants that have filled the pots with roots will require feeding when the fruit is swelling, as Figs respond well to weekly applications of some approved concentrated manure. Syringe the trees every morning with tepid water, but take care first to see that the heat of the atmosphere is what it should be.

Strawberries.—The first batch for early forcing should be removed at once into a vinery, or any house having a moderately warm atmosphere, but where the heat will not be excessive. An early Peach-house would be suitable, and in this structure the plants should be arranged in a position near to the root-glass. They are sometimes successfully started by placing the pots on a bed of leaves close to the glass; but in such a case care is required that too violent a heat is not given off from this fermenting material at any time. This is very important, as extremes would cause the plants to become weakly, the flowers small, and the fruits would be likely to be affected with mildew and insect pests. Before introducing the plants into heat, first examine the stock, and select those having well-matured crowns. Remove all decayed and decaying leaves, see that the drainage is perfect, wash the pots, and dip each plant in a solution of potassium sulphate, at the strength of 1 ounce of the potassium to 2 gallons of warm water. This will destroy any germs of mildew present. Should plants already affected with germs be placed in a warm, moist atmosphere, the mildew will spread very rapidly. Apply lime water to the roots if earthworms are troublesome.

Cucumbers.—Plants now swelling their fruits should have a steady temperature of 60° at night and 70° by day, rising with sun-heat to 75°. Be very cautious in watering the plants, and never damp the pit unless the atmospheric temperature exceeds 63°.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to LORD CLINTON, Bicton, East Devon.

Peaches and Nectarines.—Now the trees are leafless, and assuming that the work of pruning, cleansing, and training of the different kinds of fruit trees enumerated in former Calendars is being brought to a close, and the weather remains mild, there is no reason why the Peaches and Nectarines should not be given similar attention. It is customary to take these trees from the wall annually, so that the wood can be thoroughly washed, and the walls re-pointed, if this is considered necessary. In any case, the walls should be coloured afresh, as many insects that infest these trees hibernate in every hole and crevice they can get into during winter. Where the trees are trained to wires (and this is by far the best method), the necessary pruning may be done before the trees are loosened, as it can be better determined what amount of growth can be dispensed with, especially so in the matter of a large branch here and there, which at times are the better for removal. The shoots that will fruit next year are those which were made during the past summer; therefore reserve sufficient of these for replenishing the wall space when the trees are replaced in their proper positions. Imperfectly-matured shoots should be cut back to a wood bud, which will be seen to be more pointed at the tip than a fruit bud, or to triple buds, where the centre one is usually a wood bud.

Washing the trees. Red spider and the black aphid are the two worst enemies of the Peach. These locate themselves on the young and old wood alike, so that all the shoots need to be carefully washed, using a soft painter's brush or sponge for the purpose, and a mixture made from 1 lb. of soft soap, 1 lb. of flowers of sulphur, and 1½ pints of Bentley's Quassia Extract. This should be thoroughly dissolved in 2 gallons of hot water, after which 8 gallons of soft water should be added, when it will be ready for use. In treating the fruiting wood, work the sponge or brush towards the point of the shoot (not backwards), or many of the buds will be likely to get injured or rubbed off. Trees badly infested with these insects should be treated a second time as soon as the first washing has dried, choosing a dry day for carrying out this work.

Training the trees.—First tie in the main branches with cord, having in view the necessity of obtaining an equal balance of growth on either side; thus will the tree when re-trained represent the shape of an open fan. The best results follow when the fruiting shoots are trained at 4 inches apart, for a new shoot will have to be laid in at the base of each old one for fruiting in the following year. Any bare branches may be covered with a young shoot; it will act as a shade during very hot weather. Young trees that have not yet filled their allotted space should have their centre kept somewhat open by training the shoots more oblique than that in the case of aged specimens. Some cultivators, with a view of retarding the flowers, keep the trees from the wall until as late a period as possible, in which case the branches must be tied to stakes to prevent the wind from swaying them to and fro. Tying or nailing should be done loosely, so that each branch can develop freely during the coming season.

PUBLIC PARKS AND GARDENS.

By W. W. FLITGREW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

Fertilisers for lawns.—Park officials are, as a rule, no better than most other gardeners at giving proper attention to the manuring of the lawns and grass swards under their charge. It has often been pointed out that the average lawn is the most starved and badly-managed piece of ground connected with the whole garden, and this statement is equally true when applied to parks. Week after week during spring, summer, and autumn, year in and year out, lawns are mown close to the ground, and little, if any, return made to the soil for all that is taken from it. The clippings at the end of the season are not even allowed to remain and decay, but are carefully swept off and the lawn robbed of this slight source of humus. Under such treatment it is little wonder that lawns become overgrown with Daisies and other weeds, and that grasses diminish and become exhausted. To keep swards in a good, healthy condition they require to be manured quite as judiciously as flower beds or shrubbery borders.

Choice of manures.—In a public park one is a little restricted in the choice of grass fertilisers, as, for very obvious reasons, strong smelling organic manures cannot be freely used. To introduce the necessary humus to the soil under these circumstances is a little difficult, and is best done by giving a dressing from the general rubbish heap after it has become thoroughly decomposed and mixed with fine lime. Sediment, which has been taken out of a pond or lake and allowed to lie for a few years, when turned over and well broken up, and a quantity of wood ashes incorporated with it, makes a very good dressing for grass. Such dressings are usually applied by being spread thinly over the surface of the ground early in the winter prior to a fall of rain. If any lumps remain after the compost has been weathered for a time, they must be broken with a rake, and the surface swept by means of brushwood attached to a hurdle, which is drawn backwards and forwards over the lawn during dry weather. In America the favourite lawn fertiliser seems to be pure wood ashes—a commodity which can apparently be had at a very cheap rate. The manurial value of wood ashes lies in the potash and vegetable charcoal they contain. Charcoal itself, when finely ground and applied to lawns, imparts to the grass a rich green colour, but on account of its cost, its use is generally confined to the putting greens on golf courses. As wood ashes are not an article of commerce in this country, their use is limited, but is replaced by kainit, which can be obtained easily and cheaply. Both wood ashes and kainit must, like the humus dressings, be applied in winter. Mr. H. Cousins, in his useful little work *The Chemistry of the Garden*, gives an excellent formula for a cheap and efficacious lawn manure. It consists of 3 lbs. basic slag and 2 lbs. of kainit applied to the ground in winter, and 3 lbs. of superphosphate of lime to 3½ lbs. of sulphate of ammonia applied in spring. This quantity is sufficient to dress 40 square yards, and, if carefully carried out and sown just before rain, produces very satisfactory results. Soot is an old-fashioned lawn manure, which, if applied in spring, makes a very considerable difference in the growth and constitution of the herbage.

EDITORIAL NOTICE.

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Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

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Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, DECEMBER 25—
Christmas Day (Quarter Day).

THURSDAY, DECEMBER 26—Bank Holiday.

FRIDAY, DECEMBER 27—Roy. Bot. Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—38°4'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, December 18 (6 P.M.): Max. 59°; Min. 39°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, December 19 (10 A.M.): Bar. 29.9; Temp. 55°; Weather—Slight rain.

PROVINCES.—Wednesday, December 18 (6 P.M.): Max. 51° Colchester; Min. 40°; Scotland S.

Manuring
and its
Effects.

Most gardeners nowadays supplement the natural manure obtained from the farmyard or the stable by one or more of the so-called artificial kinds. But both the gardener and the farmer are rather at the mercy of those who make and advertise these substances, and they too often neglect the necessary and obvious precaution of obtaining a guaranteed proportion of the fertilising ingredients. Doubtless this often arises from the fact that the nature of the substances is not understood, and thus the figures, when they are given, convey but little meaning. This is often the case, for example, with guano, which is perhaps the best general fertiliser that can be obtained. Anyone who makes a solution of this manure realises that the greater part of what he has purchased too often consists of common soil and other insoluble matter. This is of no consequence provided he has really got the proper value, in nitrogen and other substances, for the money he has paid, because the guano, even if it could be obtained pure, is often mixed with soil before sowing on the land.

In the case of the manures compounded artificially of various substances, it is very important to know what one is really paying for, and whether due value is being got for the expenditure. Unfortunately comparatively few people possess enough simple chemical knowledge to attack these matters themselves. But those who do could easily effect a considerable saving in the annual bill for manure by making up their own mixtures from the raw materials, which are generally to be purchased at a relatively

cheap rate. Thus sulphate of ammonia can be recommended to those who desire to get rid of Daisies from the lawn, and its price will be found to be very much lower than that of certain well-known specifics which are often employed for this purpose. We have seen this cheap substance used with wonderful effect upon a lawn in which the grass was struggling between the Daisy plants. The latter were killed out by the sulphate of ammonia, and the grass speedily occupied their place. A dressing of dissolved bones and wood ashes was given subsequently, and the turf thus encouraged has continued to be the admiration of all who see it.

Some people entertain a prejudice, for which indeed there is some justification, against the use of artificial manures altogether. There is no doubt that when improperly used they may do more harm than good, especially when single substances are used. Thus nitrate of soda is often employed with results that may be disastrous later on. In this manure it is the nitrogen which is utilised by the plant, whilst the soda causes changes that, in heavy soils, may ruin the tilth for some years, since it accentuates all the bad qualities resident in stiff clay.

Again, sulphate of ammonia, if applied alone, whilst producing wonderful results at first, may be detrimental in the long run on soils that contain but little lime. In this instance, however, the remedy is easy to apply, and lime is cheap enough.

Again, basic slag works marvels in some soils, for in addition to its own immediate properties, it renders available to plants stores of potash in the soil which would otherwise be inaccessible to them. On sandy soils poor in potash, however, it may produce no effect, or its influence may even be detrimental in clearing out the scanty reserves of this essential element of plant nutriment. In such a case the obvious precaution to take is to see to it that potash starvation shall be avoided by adding it in some form, e.g., as sulphate, to the land.

There is always a danger in using what we may call one-sided manures, of depletion of the soil in respect of other constituents, and it is for this reason that mixtures of various sorts are greatly preferable, as a general rule, to single substances. It is well, then, to bear in mind, when compounding manures, that the essential constituents should include nitrogen, phosphoric and sulphuric acids, and potassium. The cost of the particular mixture employed will depend very much on the form in which the necessary ingredients are supplied, whilst the rapidity of its action will mainly be affected by the degree of solubility in water of the several substances composing it. Thus a manure made up of 7 lbs. of sulphate of ammonia, 2 lbs. of potassium phosphate, and 4 lbs. of bone meal will cost about three shillings a stone, and much less if made up in large quantity. But it is a very powerful stimulant and must be used sparingly, whilst the plants are growing. There are many mixtures on the market, the nutritive value of which is very far below that just given, but their cost to the consumer is considerably higher.

Few people realise how completely the vegetation of a lawn may be altered by manuring, although probably many may

have observed particular examples of it, as, for instance, the dense clothing of Clover that commonly results from an application of basic slag, largely owing to an indirect action on the potash reserves of the soil. The most striking object lessons of this kind are to be seen at the celebrated experimental station at Rothamsted, in Hertfordshire. There are a number of small plots of grass land adjoining each other, which originally formed a continuous part of the park. Each plot has been continually treated for a number of years with a particular kind of manure that has not been altered, and thus its effect on the herbage could be followed from season to season. It is difficult for any person now visiting the plots to realise that the vegetation of every one of them was once identical with that still prevailing in the park outside their own borders. Almost every type of herbage now finds its representative on one or other of the plots, and yet this difference has not been achieved by any form of interference with natural conditions other than the persistent application of definite systems of manuring.

* * * **OUR ALMANAC.**—According to our usual practice we shall shortly issue a *Gardeners' Chronicle Almanac* for the year 1908. In order to make it as useful as possible for reference, we shall be obliged if Secretaries of Horticultural, Botanical and Allied Societies, or any of our correspondents, will send us IMMEDIATE INTIMATION of all fixtures for the coming year.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the committees will be held on Tuesday, December 31, at Vincent Square, Westminster.

HORTICULTURAL INSTRUCTION.—The Board of Agriculture has published a very useful leaflet (No. 197) dealing with the facilities afforded for agricultural and horticultural instruction in England and Wales. Particulars as regards the courses of instruction, fees, cost of living, &c., are given in some detail, and the information will be much appreciated by those whose interest or business is connected with land, and who are desirous of taking advantage of the increasing educational opportunities which are now at their disposal.

LATE-BLOOMING ROSES.—In respect to this subject, the Rev. DAVID R. WILLIAMSON writes: "When I visited Logan Gardens, Wigtownshire, on December 12, by invitation of Mrs. McDONALD, of Logan, who is an enthusiastic amateur rosarian, many of the finest hybrid perpetuals were in wonderful bloom. Conspicuous among these were Mrs. Sharman Crawford, Margaret Dickson, and Captain Hayward, of which a large number of vigorous plants were luminous with bright buds and half-expanded flowers. Nothing could be more charming to a lover of Roses at this season of the year." Mr. J. W. MISKIN, Mereworth Castle Gardens, Kent, also writes as follows:—"To-day (December 12) I have gathered quite a large bunch of Roses, enough to fill half a dozen good-sized bowls. The varieties are Papa Gontier, Peace, Souv. de David D'Anger, General Schablikine, Lady Zoë Brougham, Fabvier (China), and the old Monthly Rose. The Rose-garden here is protected from rough winds by shrubberies on the west, north, and east sides, so that the buds do not get bruised by the beating against each other that occurs in rough weather in more exposed situations. Should the weather keep mild, I shall be able to gather a nice bunch of Roses for Christmas Day."

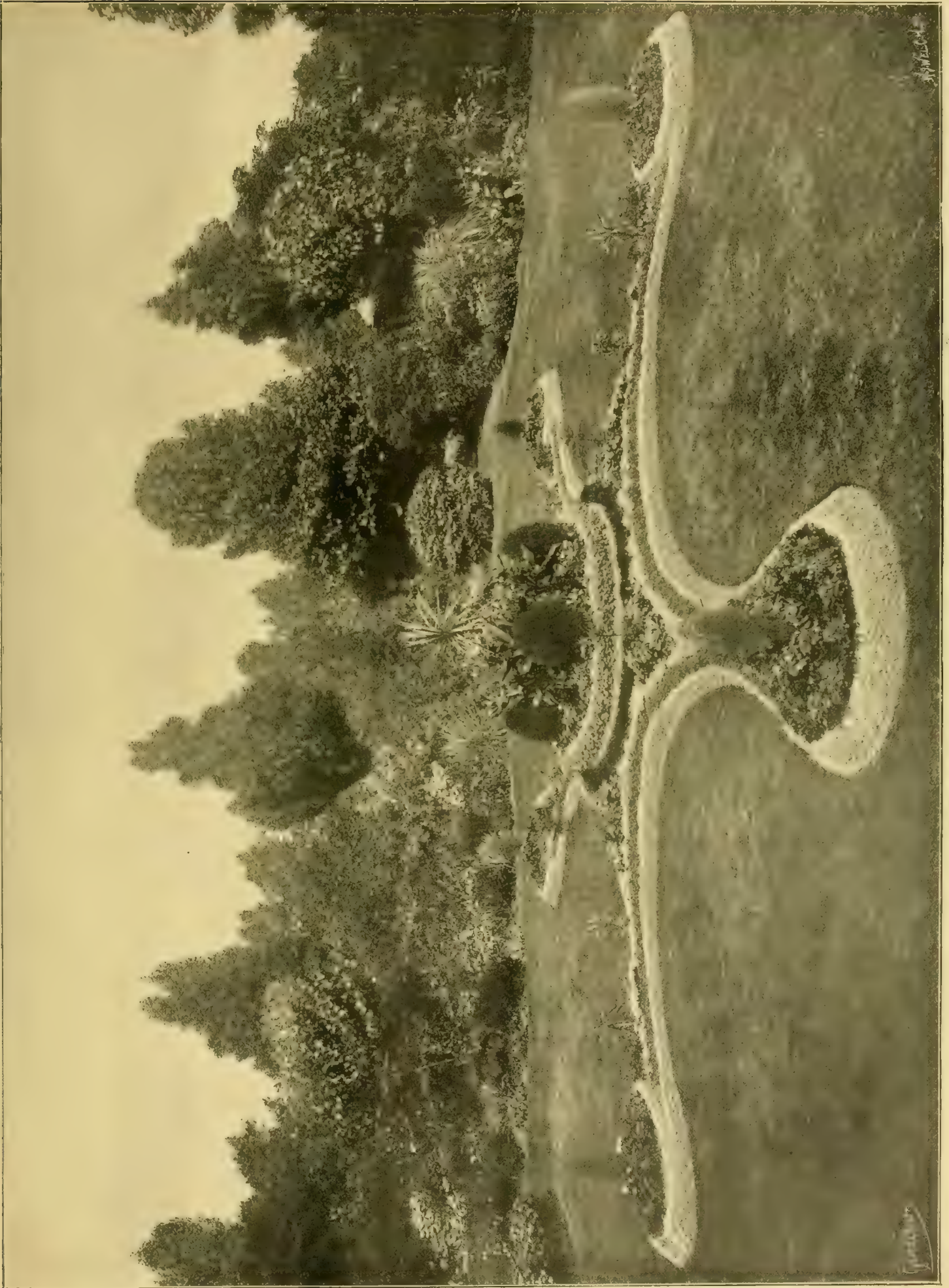


FIG. 179.—A FORMAL FLOWER-BED IN THE WEST PARK, HULL. (See page 437).

THE GARDENS OF ENGLAND.—The winter special number of *The Studio*, a monthly art periodical, is devoted entirely to the gardens of England in the southern and western counties. This attractive volume of great interest to those connected with the garden craft is issued in paper wrappers at 5s., or in cloth binding at 7s. 6d., and is edited by CHARLES HOLME. The size is 11½ inches by 8½, and the illustrations are beautiful representations of views in some of the most famous gardens in that part of the kingdom to which the editor has devoted his attention. Briefly reviewed, the work may be said to contain articles on the history of garden-making, the principles of garden-making, and notes on the illustrations. Of these, which are all full-paged, there are eight in colour and 128 in black and white. The coloured ones are after drawings by GEO. S. ELGOOD, LILIAN STANNARD, E. H. ADIE, and E. ARTHUR ROWE, and represent the Forecourt, Great Tangley Manor; Yew Arch at Brickwall; the Long Water, Hampton Court; Penshurst, &c. Some of the most effective of the black and white photographic reproductions are "Stratton Park, Hants"; "Herbaceous Flower Border at Orchardleigh Park, Somerset"; "The Rock Garden at Killerton, Devon"; "Lily Pool at Dropmore"; "Brookenhurst Park, Hants"; "Blenheim Palace, Oxon," and "The Old Orangery at Ham House," all of which are typical garden scenes. Many others include views of the mansions and picturesque portions of garden architecture.

THE POISONOUS NATURE OF BITTER CASSAVA.—It has been long known that the poisonous nature of the root of the Bitter Cassava (*Manihot utilissima*), from which Tapioca is made, is due to the presence of hydrocyanic acid; but an explanation of the matter from the chemical point of view has recently been given as the result of investigations conducted at the Imperial Institute, "which show that no variety of Cassava contains prussic acid, as such, but all contained a cyanogenetic glucosid, and associated with it are enzyme, capable of splitting up the glucosid with the formation of prussic acid. The common classification of Bitter and Sweet Cassava is based upon the amount of glucosid present." This subject is discussed in the *Bulletin of Miscellaneous Information of the Botanical Department of Trinidad* as follows:—Instances are known, however, where analysts have stated certain percentages of prussic acid to have been found in Cassava roots, but it seems clear that the acid was produced by the methods of analysis employed, especially as it is found that a continued treatment with water produced further quantities of the acid. The lesson to be learned from the above appears clear, and the explanation of the poisonous characters of Cassava is afforded. The cyanogenetic glucosids, together with the enzyme in the presence of water, give rise to prussic acid at certain temperatures. Under this explanation a family might eat cooked Cassava with the greatest impunity; but some of the identical dish, if kept for a few hours, might subsequently produce poison strong enough to cause serious effects, and even death, if eaten by a human being. Nevertheless, the methods of preparing Cassava for food in the countries where it is a daily staple and a chief food of the people, are such as to negative the production of poisonous material, and even some of those kinds known to carry a large amount of cyanogenetic material can be consumed without danger if properly treated. The proper procedure is to boil Cassava in several changes of water, or by driving off poisonous matter by roasting or baking processes, and by never consuming moisture-con-

taining material that has been left over from a meal a sufficient length of time to generate the poison. The tortilla cakes of Central America and Brazil are well known as wholesome food, and they may be eaten daily without danger. So also are the Cassava cakes of the West Indies, which are always toasted to a crisp state before being eaten. The preparation known as Farine—a kind of coarse flour or meal—should also be well dried before being eaten, as it is known to generate prussic acid if allowed to become damp. The caution therefore should be: Always eat Cassava products fresh and well roasted or baked, and when boiled several changes of water should be used in the process. It may be mentioned, however, that the sweeter kinds are always used for boiling purposes, the bitter kinds being kept for starch making, although the latter may be used without danger if proper care is taken in their preparation. The Tapioca of the European grocer is mainly obtained from the starch of Bitter Cassava.

THE HOUSE FLY.—The common house fly is so well known, and plays its part so ably in contributing to the sum of human ills that it may seem a matter of surprise that its life history, and especially its breeding habits, have been hitherto but little investigated. Mr. ROBERT NEWSTEAD has brought together the results of his investigations on this question in a pamphlet published by the Health Committee of the City of Liverpool. He finds that the fly breeds in fermenting vegetable matter in preference to any other. Stable manure and spent hops provide the best material, but ash-pits containing refuse of various sorts also contained the maggots, though, in a far less degree. The fly does not breed, like the bluebottle and many other carrion feeders, in decaying animal matter. The maggot stage varies much in its duration, being shortest (about a week) in warm, fermenting media, and this points to the desirability of emptying ash-pits, &c., at frequent intervals. Poultry search very greedily for the grubs, and thus help to keep the number of flies down in places where stable manure or other litter accumulates. The information thus gathered by Mr. NEWSTEAD is of considerable economic value, as indicating the best means of preventing the rapid multiplication of so troublesome a pest. For now we know its breeding habits, it is possible to deal with the pest, and at a time in its life history when it is most vulnerable. Preventive measures become the more imperative when it is remembered that besides the annoyance which it causes, the house fly is one of the common agents responsible for the spread of certain diseases, owing to the filthy habits of feeding which characterise the adult insect.

POLLUTION OF RIVERS.—At a largely attended conference-meeting, convened under the auspices of the Essex Field Club, and held in the Municipal Technical Institute, Stratford, on December 14, the Mayor of West Ham (Councillor J. R. MOORE-SMITH, J.P.) being in the chair at the beginning, and subsequently the President of the Essex Field Club (Mr. MILLER CHRISTY, F.L.S.), there being present naturalists, geologists, meteorologists, manufacturers, sanitary officers, and representatives of Water Boards and of County and Borough Councils, the subject of "River Pollution from the Naturalists' Point of View" was introduced by Professor R. MELDOLA, F.R.S. (past-President of the Chemical Society). Among other speakers on the subject were Mr. E. B. BARNARD, M.P. (Chairman Works Committee, London Water Board), Mr. DAVID HOWARD, J.P., F.C.S. (past-President Society of Chemical Industry), Mr. KENT (Bishops Stortford Urban District Council), Dr. PARSONS (Local Government Board), Sir ALEXANDER PEDLER, K.C.I.E., F.R.S. (hon.

secretary, British Science Guild), Mr. J. BROOK PIKE (Chemical Expert, London County Council), Professor Sir WILLIAM RAMSAY, K.C.B., F.R.S. (President of the Chemical Society and Chairman of the Royal Commission on Sewage Disposal), Dr. SANDERS (Medical Officer of Health, County Borough of West Ham), Dr. SOMMERVILLE (Lecturer on Public Health, King's College, London), Mr. J. C. THRESH, M.D., D.Sc. (Medical Officer of Health, Essex County Council), and Mr. J. MACK-WORTH WOOD, C.E. At the close of the meeting the following resolution was moved by Sir ALEXANDER PEDLER, F.R.S., seconded by Mr. E. B. BARNARD, M.P., carried unanimously, and ordered to be transmitted to the Local Government Board and the British Science Guild:—"That this meeting, having heard the expert testimony of many qualified speakers interested in the improvement of the state of our rivers, streams, and water-ways, it is of opinion that legislative action is urgently needed, and would regard with satisfaction the creation of a central authority under Government for dealing with the general question of water supply throughout the kingdom, as well as with the disposal of sewage and of effluents from factories; such central authority to be given power to apportion expenditure on sewage treatment or other necessary work of purification amongst the communities deriving benefit from such expenditure."

ROOT SOLVENTS IN THE SOIL.—It has long been accepted as a fact that plants help themselves to a part of their mineral food by means of the solvent action of their acid root sap on the particles of soil with which the rootlets come into contact. The observations most frequently quoted in support of this are the classical ones of SACHS, who showed that the acid of the root sap was sufficient to etch, by its corrosive action, the surface of polished marble buried beneath the soil. Writing upon this subject in *Science Progress* recently, Mr. A. D. HALL, M.A., director of the Rothamsted Experimental Station, says: "Though it has always been recognised that the roots of plants in the main derive their nutriment from substances dissolved in the water within the soil, yet the possible direct solvent action of the roots themselves upon the solid materials of plant-food has long been a debated question amongst plant physiologists and agricultural chemists." The problem has been attacked from several distinct points of view, and the investigators find applications in one or two rather unexpected directions. For example, the analyses, of which many exist, of our chief farm and garden crops show that the normal action of plants upon the soil is to leave behind a basic residue from the neutral salts on which plants feed, and that so far from plant-roots being excretors of acid, their action upon the soil is precisely the contrary. Investigations have shown that they leave behind, in the soil, after their growth, quantities of base equivalent to from 100 to 300 lbs. of calcium carbonate (lime) per acre, and this affords an explanation of several facts in the field hitherto difficult to understand. For instance, many soils possess but traces of base (lime, &c.) available for the neutralisation of the acids produced during nitrification, a process which is always going on in nature; and indeed, it is the normal preliminary step to the supply of nitrogen to the plant. Despite this constant draft upon the small amount of base (lime) in the soil, these soils maintain their neutral character when in arable cultivation, and show no signs of becoming sour and infertile. There must therefore be some recuperative process at work, and this we may now attribute, according to recent research at Rothamsted and elsewhere, to the growth of the crops which annually take from the soil such an excess of acid as will leave behind an amount of base (lime) of the same order of magnitude as that consumed in the nitrification process.

ODONTOGLOSSUM × ANDERSONIANUM. Our attention has been drawn to the fact that the illustration in our issue for November 30 of the variation exhibited in flowers of this species was published in the *Orchid Review*, vol. xiii., p. 221. We regret that, owing to an oversight, this fact was not communicated to us by our correspondent, Mr. RAFFILL, when the photograph was submitted for inspection.

CRYPTOGAMIC BOTANY AT THE MANCHESTER UNIVERSITY.—The University of Manchester has just become the recipient, under the will of the late Prof. THOMAS BARKER, of about £40,000, which is to be devoted to the foundation of a Chair of Cryptogamic Botany, and also for the provision of bursaries or scholarships for the assistance and encouragement of students in botany and mathematics. Prof. BARKER formerly occupied the Chair of Mathematics at Owens College (now the University) in Manchester. He was a very distinguished mathematician, and some of the foremost leaders in physics and mathematics at the present time were amongst his former pupils. But he was also devoted to the study of the lower plants, and he has emphasised this devotion by his munificent bequest to his old University. The Botanical Department of the University has a splendid chance before it of further development, and we do not doubt that it will utilise its great opportunity to the fullest extent.

GINSENG IN QUEENSLAND.—The extraordinary value set by the Chinese on the roots of their native Ginseng (*Aralia quinquefolia* var. *Ginseng*) is a matter well known to many people. It became, however, more especially interesting during the progress of the Russo-Japanese war, since the cultivation of the plant in Corea and the export of its roots to China was a Government monopoly, and amounted in 1905 to 107,485 lbs., valued at £102,351. The Imperial or Manchurian Ginseng is the finest quality, and is prepared for export by steaming it for some hours in baskets placed in earthen vessels. Its value in China is for the tonic and stimulant properties it is said to possess. The true species (*A. quinquefolia*) is a native of North America, and the roots are collected in the Alleghanies from Pennsylvania to Tennessee, from whence they are exported to China in large quantities, as a substitute for the Chinese product. According to a note in the *Queensland Agricultural Journal* for July last, it would seem that the commercial importation of the American root into Brisbane has been contemplated, as the following extract from a letter of the COMMISSIONER OF TRADE in China to the UNDER-SECRETARY FOR AGRICULTURE AND STOCK in Brisbane will indicate. He says: "As to why cultivated Ginseng is considered of poorer quality than the wild, the Chinese make no distinctions as regards this point; but in the grading the cultivated product seems to fall lower in the scale on account of it being less firm in consistency than the wild. A spongy root is practically worthless. If the Ginseng is not well packed, and absorbs moisture in transit, it also lowers the grade materially. On account of these difficulties to be overcome, it would seem advisable to endeavour to find a Chinaman buyer in Brisbane for some portion of the first crop now being cultivated at the State farms. A good test of values could thus be obtained. There is always a good market for American Ginseng in Shanghai and Hong Kong."

Publications Received.—*Who's Who*, price 10s., and *Who's Who Year-Book*, 1908, price 1s., published by Adam & Charles Black.—*Daily Mail Year-Book*, 1908, price 6d., published by the Amalgamated Press, Limited.

HULL PUBLIC PARKS.

THE city of Hull is particularly favoured in the number of public parks and open spaces it possesses. In addition to these the main streets are planted with avenues of trees that are in some cases set in a grass border 20 feet wide. Perhaps the most important of the parks is the one known as Pearson Park. This fine open space of 25 acres was presented to the city by one of its citizens, Zacariah C. Pearson, who in 1858 filled the office of Sheriff and in 1859 that of Mayor. It is situated near to a thickly-populated part of the city, and is on the line of two routes of tramways. The land was given by Mr. Pearson, and the work of laying out the ground was undertaken by the Corporation, who commissioned Mr. J. C. Niven, at that time curator of Hull Botanic Garden, to prepare the necessary design. Many additional features and improvements were added to the park by the late superintendent, Mr. E. A. Peak, who held the office for 40 years. The main entrance to the park is through handsome wrought iron gates, the design of which include at the top the arms of Hull City and of Hull Trinity House.

to 30 square feet, and although the method of planting is not confined to one system, that known as dot bedding largely prevails. Thus in many of the larger beds as many as 60 or 70 varieties of plants are employed. Some few of the beds are of the carpet design, and where colour is massed the beds are situated in the background, and these are employed to brighten the more sombre hues of the shrubbery behind them. This plantation of shrubs and trees is an excellent one, and forms a fine setting to the scene when the beds are gay with their summer occupants. The border of this shrubbery is undulating, and many of the stronger growing varieties of Pelargoniums are planted on the margin, but extending inward several feet to the tree line the border is planted with hardy herbaceous perennials. Dahlias are allotted a special corner to themselves. Altogether there are some 20 flower beds in this spot, and as the ground slopes towards the roadway, they are seen at a considerable distance. One bed, specially pleasing, was planted with tall Fuchsias and yellow Musk (*Mimulus*), the border being completed with blue Lobelia and *Alyssum maritimum*. Another had a very pleasing combination of a silver-leaved Pelargonium



FIG. 180.—FLOWER-BEDS IN PEARSON PARK, HULL.

The scene at the entrance is very pleasing, and it becomes at once apparent that the park is maintained in a high degree of beauty and order. Numerous flower-beds meet the eye, and stretching in front are grass swards with trees and flower borders approached by well-kept paths. To the left, the walk skirts a lawn enclosed by a dwarf fence and hedge, with a background of shrubs, and one would never imagine they skirted a busy thoroughfare. Cut in the grass sward are innumerable flower beds, which at the time of our visit were filled with their summer occupants. Some of these beds are shown in fig. 180. Interspersed among the beds on the lawn were many handsome foliage plants, including shrubs and small ornamental-leaved trees. These include *Prunus Pissardi*, *Daturas*, *Ailanthus glandulosa*, *Acer negundo*, *Catalpa bignonioides*, *Spiræa opulifolia aurea*, Japanese Maples, *Euonymus latifolius albus*, the golden-leaved Oleander, *Veronica Andersoni* in variety, *Cornus Späthii aurea*, *Aralia pentaphylla*, *Eucalyptus* in variety, *Phormium tenax*, *Agapanthus umbellatus*, and many others.

The principal beds have an area of some 20

on a ground work of *Viola* with lavender-coloured flowers. Another contained *Begonias* of the *semperflorens* type, with a raised border of *Mesembryanthemum cordifolium variegatum*, and above a row of blue Lobelia. The borders to the flower beds were especially well designed, and they formed a feature of great interest. Sometimes three tiers of plants were employed, each being in harmony with its neighbour. One scroll bed had a centre composed of scarlet Pelargoniums, with *Kochia scoparia* at intervals along the middle, and an outer row of *Santolina*, a border of blue Lobelia provided a pleasing finish to the whole. Tall *Nasturtiums* with *Gladioli* furnished one pretty bed. *Verbenas* and *Fuchsias* intermixed another, Ivy-leaved Pelargoniums, standard plants of *Heliotrope*, tuberous-rooting *Begonias*, *Gazanias*, *Abutilons*, *Cannas*, *Tagetes*, *Funkias*, *Phlox Drummondii*, and a host of other subjects were arranged with good effect in the other numerous flower beds in this quarter. Almost at the opposite end of the park was a flower bed designed in true carpet pattern. It was made to represent a roll of stair carpet, with a length of carpet unrolled, and, however much this style of flower

gardening is derided by some critics, it is highly popular with the public. An interesting feature is what appears to be an old ruin (see fig. 181). This has been formed principally of portions of old Hull buildings, that have been removed when the fabrics have been renovated or pulled down. The surroundings are planted with beds of Calceolarias and herbaceous perennials, with Rhododendrons in the background.

The area includes a lake, somewhat small, but excellently designed, for no great portion can be seen from any one spot. A neat rustic bridge crosses its narrowest part, and here a good view is obtained.

Apart from the many songsters in the trees around are others of British and foreign species confined in spacious aviaries. The captive birds are a source of pleasure, especially to the juvenile visitors.

In a more prominent part is a large and well-designed glasshouse. This conservatory is open to the public, who are not slow to take advantage of the pleasure a visit affords. It is tropical in character, and contains Palms, Orchids, Codæums (Crotons), of which some 40 varieties are cultivated; the Papyrus was represented by a fine plant, the shoots reaching to the roof;

the day of our visit. The tall platform ladders used in connection with the street lamps are used for the purpose, and the fruits are detached by means of rakes.

There are a number of fine avenues, and many trees on the grass, including two handsome specimens of standard Willows, whilst the outskirts are enclosed with shrubberies. Several pretty arbours, thatched in a neat manner with reeds, afford shelter from rain and sun.

An enclosed garden is utilised as a propagating and nursery department, and a hurried glance through the glasshouses showed the provision made for replenishing the conservatory and maintaining the stock of bedding and other plants for embellishing the park at the various seasons of the year.

THE WEST PARK.

This park was opened in 1885, is situated on the Anlaby Road, and a line of tramcars passes by the main entrance. The necessary land was purchased by the corporation, and the work of laying it out provided occupation for the unemployed at the time when the site was purchased. The park is planted with several avenues of trees, a central one being formed of four rows of

out the summer months. Fig. 179 represents one of the larger flower beds in this flower garden. The centre is planted with Cannas, Dracænas, Grevilleas, Abutilon Marshallii, Begonias Fairy Queen, Marguerites, Ivy-leaved Pelargoniums, &c., and these are surrounded by a raised edging of Pelargonium Little Trot. The narrow radiating portions are planted with small Begonias, Lobelia Mrs. Clibran, and other plants. At intervals Kochia scoparia is used as a "dot" plant, and extensive use is made of Antirrhinums, including the varieties Queen of the North, Ruby, Pink Bedder, and others of terra-cotta shades. The edging is formed of Antennaria tomentosa.

Many of the smaller beds were planted with Fuchsias, Gazanias, Pelargoniums, Calceolarias, and Heliotropes, and around them are raised edgings of Echeveria secunda glauca, E. farinosa, and other species. One large bed was entirely filled with "succulents." At the back of the flower garden is an herbaceous border that is planted with a variety of subjects. Traversing this part of the park there is a circuitous path; this is flanked by a rock garden, and though the rockery is of recent construction it is well furnished with suitable plants. Throughout the year there is always something of interest in this quarter of the park, for, in addition to the rock garden and herbaceous borders, there is a miniature water garden, the banks of which are planted with Willows, Glyceria spectabilis, species of Carex and Cyperus, Molinia, &c. Delphinium, Gladiolus, and Violas are freely planted hereabouts, and immediately beyond is a very long border, that is planted in summer-time with about 120 varieties of Dahlias.

(To be continued.)

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

ROMNEYA COULTERI.—I do not cut the shoots of this plant to the ground annually, as suggested by Mr. Jenkins on p. 417, but retain some of the stronger growths of the previous year, because these produce very early blossoms and thus lengthen the season of the plant's flowering. I apply liquid manure and other stimulants to induce a vigorous growth from the base for the purpose of obtaining the best flowers. Although this *Romneya* may succeed in the open with the shelter Mr. Jenkins describes, I think much the best results are obtained from plants growing at the base of a south wall, and in such a position that they can produce those stoloniferous growths that give a continual crop of extra fine flowers. *E. Molyneux.*

HEAVY RAINFALL IN SOUTH WALES.—The total rainfall in Cardiff for the first 14 days of December has been 6.51 inches. The average for the whole month (during 43 years) is 3.98 inches. It is raining steadily as I write, and there is every prospect of a startling record before the month is over. The statement in the *Gardeners' Chronicle* for the 14th inst., that 2½ inches is the average rainfall for December at Berkhamsted reminds some of us forcibly of the moistness of the climate of South Wales as compared with that of the south and south-east of England. The effects of this difference of climate are very marked in the garden. Plants such as *Tiarella cordifolia* and the mossy *Saxifragas*, which require partial shade in the home counties, luxuriate in a position exposed to full sunshine here. *Iris Kämpferi*, treated as a border plant in a soil that is only moderately moist, produces large flowers in abundance. The luxuriant growth of Bamboos is remarkable. Planting operations may be undertaken here at a later date in spring than would be safe in a drier climate. Special precautions against "damping off" must be taken with some plants, and the gardener coming to this district from an eastern county will find it necessary to modify his cultural practices in various ways to suit the different circumstances. *Harold Evans, Llani-shen, Cardiff, December 16, 1907.*



FIG. 181.—IMITATION RUINS IN PEARSON PARK, HULL.

Acalyphas, *Anthurium crystallinum*, *Ixoras*, *Rondeletias*, *Allamandas*, *Caladiums*, *Pandanus Veitchii*, *Aralias*, &c., all exhibiting good culture. There were also seen many smaller stove plants. The roof was hung with baskets of *Nephrolepis*, including the newer varieties. In their season of flowering are on show *Gloxinias*, *Celosias*, *Browallia speciosa*, and similar subjects, while provision is also made for a display of flowering subjects in the autumn and winter seasons.

A rock-garden forms part of the garden scheme around this house, and it is furnished with choice and rare plants, all prominently labelled. The naming of the plants is of especial interest to the students of nature-study in the public schools, and we were informed that the boys pay greater respect to the plants and are not so mischievous when they have learned to know something of the structure and habits of plants. The Horse Chestnut when in fruit is a great temptation to boys, and much damage is done to the trees and the ground about them in their endeavours to dislodge the fruits. To prevent temptation, these fruits are removed in Pearson Park, and this work was being done on

Limes and Horse Chestnuts, the centre being broken with an ornamental fountain and water-basin, which is planted with suitable aquatic subjects. The area embraces a stretch of ornamental water, around which are growing several fine specimens of the Silver Birch. There is a large conservatory, which is open to the public, and this is furnished throughout the year with seasonable plants. A display of *Chrysanthemums* is provided in this building from September to January. The house contains many large Palms and other foliage plants, including *Araucaria Bidwillii*, *A. excelsa*, *Phormium tenax*, *Cupressus funebris*, &c. *Begonias* *Haageana*, *Carolina*, *President Carnot*, and others are very bright in their season of flowering. At other seasons the house is furnished with herbaceous *Calceolarias*, *Cinerarias*, *Primulas*, *Cyclamen*, *Pelargonium*, *Schizanthus*, *Lilies*, *Salvia splendens*, &c.; whilst baskets of Ivy-leaved *Pelargoniums* and *Fuchsias* are suspended from the roof, which is further brightened by *Clematis*, *Bougainvillea*, and other climbing plants.

The flower garden is situated in a prominent position in the park, and is a gay corner through-

SEED AND SOIL INOCULATION.—I hope A. D. will be able to induce the council of the Royal Horticultural Society to institute a trial or demonstration of the advantages of soil inoculation at Wisley next season. The fact that over 1,000 packages of living-culture material were distributed from King's College during the last two seasons clearly shows that the interest in the matter in this country will soon be as great as it is in America. With Mr. Chittenden there ought, I think, to be associated a small special committee consisting of three practical growers and three scientists, and possibly Professor Bottomley would agree to ensure that the culture-material was in good condition and properly handled. *Wm. Cuthbertson*

THE AURICULA.—On reading over my article on p. 405 I find a very grave mistake, which cannot be a printer's error, but a lapse of my own. Instead of seven growers sending in lists there were 27. The National Auricula Society (Southern section) was founded when these lists were prepared (1876-7); a great impetus to the culture of the Auricula was given, and the leading northern growers brought their choice specimens to London. Many of these worthy old florists have gone, but happily some are yet with us, including the Rev. Francis D. Horner, and there are many additions to the ranks. The society has held meetings and exhibitions without a break since 1876. Arrangements have been made with the council of the Royal Horticultural Society to hold the 32nd exhibition in 1908 in the hall of the Society, Vincent Square, on the last Tuesday in April. Mr. Thomas E. Henwood, 16, Hamilton Road, Reading, is the hon. secretary, and he is eager to enrol new members who are also cultivators of the Auricula. *J. Douglas.*

BORDER AURICULAS.—When our esteemed friend, Mr. James Douglas, heads his interesting paper on page 405 "The Auricula," and in that paper refers to the florist's Auricula only, I hardly assume that he means to convey the impression that no other Auriculas exist. But whilst my regard for the florist's Auricula is warm, my esteem for the hardy border Auricula is at fever heat, and that section is to me "The Auricula" proper. It is to be regretted that no one, especially an amateur, with ample time, means, and years, does not set to work to create for our spring gardens far more beautiful hardy Auriculas than we have. To any true lover of hardy flowers that should be a labour of love. The plants are very hardy, and they bloom freely, but the dominating defects are weak flower stems, flowers of very dull unattractive colours, and generally of indifferent form. We want stiff, erect stems, bright pleasing colours, large rounded "pips," and impressive beauty. Given these features, and the hardy border Auriculas will have a long and popular innings. *A. D.*

LARCH DISEASE AND LARCH APHIS.—I was much interested in Mr. Burdon's account of his researches on the Larch aphis, published in the *Gardeners' Chronicle* of November 23. In proving that the mother aphis punctures the bark or epidermis of the shoot, he has doubtless strengthened the theory that the insect is a possible factor in the spread and prevalence of the blister, and may tend to increase the virulence of the latter. But when Mr. Burdon goes on to suggest, as Mr. Massee previously suggested in the *Journal of the Board of Agriculture* for September, 1902, that the disease is the usual and natural sequel of aphis attack, I am afraid he is confining himself too much to the laboratory side of his subject, and not paying sufficient attention to it in the open air. Before *English Estate Forestry* was published, I referred to this matter in the *Gardeners' Chronicle* for November 13, 1902, and there stated that "it is just possible that the same causes which favoured the aphis attack might also favour the fungoid attack, even if the aphides were absent." I have seen no reason for since altering my opinion. Larch disease is widespread over England, Scotland, Wales, and Ireland, and the Larch aphis is equally widespread. But, as every practical man knows, the virulence of the attack in either case varies, not only in districts, but in individual plantations and individual trees. If a definite proportion existed between the occurrence of aphis-infested and disease-infected woods or trees, the theory of cause and effect might be

justified. But this is exactly the point on which the theory is not supported, and the same absence of support occurs when we attempt to connect Larch disease with soil, climate, seed, aspect, and various other possible causes to which it has been attributed at one time and another. Two years ago the Royal Scottish Arboricultural Society appointed a committee of enquiry on the Larch disease, and the only definite conclusion arrived at was that further investigations were necessary before anything definite could be said about the connection of the disease with any of the above-mentioned factors, and Larch aphis was included amongst the latter. As I suggested in *English Estate Forestry*, two such widely-spread and universal parasites must obviously synchronise in their attacks to some extent, in much the same way that human and bovine tuberculosis occur side by side in the same district or on the same farm, although the origin of each may only be remotely connected. The wool-secreting form of the aphis found on the stems of the Larch is rarely seen in many districts in which the disease is rampant, and the most common form of the aphis is the naked mother, which hibernates either in the axils of the buds or in the crowns of the dwarf shoots. While many blisters occur ultimately on such sites, for the simple reason that they have to occur somewhere, if they are to occur at all, there is no more ground for supporting the theory of connection between the two incidents than in the case of the other possible causes to which I have alluded. Mr. Massee's success in incubating a spore under a mother aphis is interesting, but is no stronger link in the chain of evidence than the hatching of a duck's egg under a barn-door fowl would be in the theory that hens are necessary for the propagation of ducks. There is little doubt that any factor which reduces the vitality of the Larch tends to favour the blister disease, and Larch aphis may well be included in the same category as spring frosts, exceptionally wet or dry soils, density of cropping, with a dozen other factors which play a more or less important part in affecting the development of the tree. But until the puzzling features associated with the disease have been cleared up in the minds of practical men I am afraid the Larch aphis will have to take a back place, although we are none the less thankful to Mr. Burdon for his researches on a troublesome pest. *A. C. Forbes.*

INARCHING VINES (see pp. 379 and 417).—Having a Muscat vine growing in our late house of Black Hamburg vines, I experimented two years ago by putting on a graft of the new Melton Constable Grape, thinking probably the stock would influence the flavour of that variety, but I cannot say that the graft has proved of much service. It ripened this season, a few bunches of very fine berries, and without the aid of fire heat from July onwards, but the quality was only third-rate. The bunch and foliage remind one very much of Gros Colmar, but as the fruits will ripen well without heat it has an advantage over that variety. As a market Grape it should have a good future, as the "bloom" and handsome appearance will count for much. The vines here are those from which the late Mr. Henderson exhibited so successfully nearly half a century ago; they still continue to bear good crops of well-finished berries. They are pruned on the same principle as formerly, namely, cutting back the shoots to the best "eye" on the extension system. The vines are now 78 years old, and, judging by the wood they produce annually, they appear capable of living until they are 100 years old. *H. Wilson, Cole Orton Gardens, Ashby-de-la-Zouch.*

MODERN FLOWER-GARDENING.—Mr. Brotherstone commented on p. 379 on the change which is taking place in the northern part of the kingdom in the treatment of flower gardens and herbaceous borders. At this place the desire is also to have a late display, and this is more necessary because the family are not in residence during the summer. Some of the annuals mentioned by Mr. Brotherstone I have not tried, but some perennials that he does not mention have been very successful here. *Schizostylis coccinea* has been very brilliant for two months past, and has arrested the attention of visitors. It is still flowering, and I cut over 50 spikes on November 23. The plants should be divided annually in March into pieces with two or three

growths. *Sedum spectabile*, used as a double edging to a large bed of Fuchsias in a rather shady part of the flower garden, was very effective as late as November 11. *Aster ericoides* is still fresh, and has been in flower for fully six weeks. We depend for an autumn display largely on the early-flowering *Chrysanthemum*, of which we grow about 500 plants in many varieties. Mme. Desgrange and M. Gustave Grunerwald are the least successful. A fortnight ago I lifted in full flower the following varieties from the open ground, and placed them in cool Peach houses for cutting purposes: O. J. Quintus, M. W. Holmes, La Triomphante, Mme. L. Leroy, Soleil d'Octobre, M. B. Gerarde, Ryecroft Glory, and Ivy Stark; also Lizzie Adcock, in bud, which will open perfectly and be of use. I also grow Cactus Dahlias in quantity, and find them good wet-weather flowers. Sweet Peas are a total failure in autumn here, as they cannot endure our moist climate. *Hydrangea Hortensia* and varieties in good positions are most effective. The same may be said of *H. paniculata grandiflora*. *Swainsonia galeifolia* and *S. galeifolia alba* are useful tub-plants and flower persistently from May to late November, and I should think they would make effective border plants. *F. Street, The Gardens, Ardwell, Wigtownshire, N.B., December 1.*

LILIAM SULPHUREUM.—In the communication referring to *Lilium sulphureum*, on p. 179, D. D. states that it "should be given a loamy soil rather than one containing peat." Our experience in Devonshire is exactly the reverse, as, with us, it succeeds far better in peat than in loam. A friend grew *L. sulphureum* in ordinary soil, with the result that it made poor growth and flowered sparsely. He then shifted the bulbs into pure peat mixed with a goodly proportion of rough grit, and the plants at once showed that they appreciated the change. This year, after two seasons in the peat, they made particularly vigorous growth, the tallest reaching a height of 7 feet 3 inches, and bearing 17 perfect flowers. This was the finest specimen I have ever seen in the open. Other bulbs in the same garden, which have been left in the ordinary soil, have not approached the dwellers in peat, being quite 3 feet shorter, and not bearing more than six flowers. Mine are now planted in peat, and I hope to emulate my friend's success. *S. W. Fitzherbert.*

WHAT IS AN HERBACEOUS PLANT?—In commenting on my note on *Romneya Coulteri*, p. 417, Mr. Jenkins, in defining what an herbaceous plant is, opens up a theme for much discussion, for many persons differ greatly in their meaning of an herbaceous plant. I agree with Mr. Jenkins in his definition, and Mr. Nicholson in his *Dictionary of Gardening* also describes it as "a term generally applied to any border perennials which are not shrubby in habit." Although agreeing to this definition, circumstances do occur when some latitude is demanded by exhibitors as to disqualification of certain subjects when shown in all good faith as herbaceous plants. When judges allow certain subjects to be included in the category of herbaceous plants, the exhibitor is encouraged to repeat the practice. A different set of judges another year may disqualify—and properly—but no person will deny that some hardship is thus thrust upon the exhibitor. *Romneya Coulteri* was once in dispute at a large show in a similar connection to that described. My wish was to disqualify the exhibit, but I was overruled by my two colleagues. How would Mr. Jenkins treat *Phygelius capensis* and *Pentstemon Newbury Gem*? The former has more than once been the subject of discussion at flower shows, as in some gardens this *Phygelius* dies down annually, while in others it preserves a shrubby habit, and flowers from the old growths the following season. *Pentstemons*, especially the variety named, are usually shown in the classes for herbaceous flowers, but they are undoubtedly evergreen subjects, and will often retain their leaves and stems through a mild winter. Some of the perpetual flowering Pinks and Carnations, too, could easily come under this denomination. No doubt the list could be multiplied, but sufficient has been said to prove how difficult it is at times for judges to act conscientiously, and not harshly, with exhibitors, who do not know and who have been encouraged improperly by former decisions. *L. Molyneux.*

DECORATIVE VALUE OF BALSAMS.—This year I have been agreeably surprised with the decorative value of Balsams, though they are very seldom seen nowadays. They have a wide range of colour, and when well grown the plants exhibit a pretty branching habit; the longest shoots become pendant, giving to each plant the appearance of an artistically arranged flower vase. For anyone who has a stock of flowering plants to maintain for house decoration, they are admirably suited in their season, as they last in good condition a week or more together. This year I had a small batch of plants which have done duty in the drawing-room on four occasions; the last time they were used they were just as lovely as on the first occasion. By putting them back in the greenhouse after they shed each crop of flowers, picking off the seed pods, applying weak manure water and the syringe, they were quickly induced into flower again. The seeds were sown in March, and the plants were potted in a free-rooting medium of loam, leafmould, sand, and manure from a spent Mushroom bed. They were cultivated in a warm, moist atmosphere, kept near the glass, exposed to full sunshine, and well syringed until they were established in 8-inch pots, in which they flowered. At this stage they were given cool treatment. *John Denham, Gardener, B. I. well House Gardens, Hayes, Middlesex.*

THE FLORIST'S ART.—Those who attend flower shows, public functions of all kinds, and who witness the efforts of the gardener in arranging the decorations of a dinner-table, or of an apartment in a private house, will frequently have had reason to lament the lack of good taste, and the poor results obtained, despite an abundance of fine material from which to choose. This too common fault is due, in most instances, to lack of opportunity for studying examples exhibiting fine contrasts of colours in flowers and foliage, or harmonious blendings of forms and colours in one or the other; or in the use of colour in flowers by artificial light that are fit only for daylight effects, or *vice versa*. There are many occasions when decorations in flowers and leaves are permissible, and I may name a few, as weddings, christenings, balls, &c., each of which should have its special kind of decoration. Generally, the task of decoration on these festive occasions falls on the gardener, or the ladies of the house, the latter being the more successful as decorators by reason of their more naturally refined taste and their greater opportunities for observing tasteful examples. If special shows could be inaugurated by some of the more important horticultural societies, at which prizes, in cash, medals and diplomas could be awarded for various classes of floral decorations, we might soon hope to see a decided improvement in the florist's art in all its phases. Some of the competitions should be "open," and the prizes in these of considerable amount, thereby enabling florists by profession to enter the lists as exhibitors. Such shows would remove much of the monotony commonly associated with horticultural contests of the usual kind, besides offering some examples worthy of being copied or adapted by the visitors, or hints as to the uses to which floral materials can be put with excellent effects. In some exhibitions prizes are offered annually for "groups" and "tables" of flowering plants, Ferns, Mosses, Palms, &c. Of what practical use are such displays? In what drawing-room, conservatory, or other place would they be tolerated? At a show they merely help to occupy the floor, and to exhibit the resources of the gardens from which they have come. *F. M.*

GRAPE APPLEY TOWERS.—Mr. G. Harvey does well to call attention on p. 417 to this Grape, for it is not nearly so much cultivated as it deserves to be. Calling at Windsor on November 8 last, I was shown by Mr. McKellar a house filled with Appley Towers, with the exception of an odd rod or two of Alicante. Mr. McKellar has long since recognised its value as a mid-winter variety. The bunches were hanging quite thickly on the young vines, and were models of good form; the berries were of full size, and as well coloured as Grapes could be. I need hardly say that the vines were in the best possible condition, as all of those at Windsor are. *E. M.*

THE PREVENTION OF CORRUPTION ACT, 1906.

TO THE EDITOR OF THE *Gardener's Chronicle*.

Sir,—Will you permit me to say that I have read with much interest the able article in your number of December 8, 1906, entitled "Secret Discounts," and will you permit me to add a few observations on the subject? A bribe is never called a bribe, and "discount" is one of the innocent words perverted to an unlawful end by those who wish to conceal the reality of what they are doing. A discount is a sum refunded or allowed on settlement by the payee to the payer: it is not a sum given by the payee to any third person. A gift, a present, a Christmas box may all be innocent and pleasant things, but they may all be names to cover a very ugly thing—a bribe.

It is worth while to observe that the recent Act dealing with secret payments to agents and servants does not trouble itself much about words or names: it aims at every gift and every valuable consideration of any kind given or offered or received or solicited as an inducement or reward for any favour shown or to be shown by the recipient to the donor in relation to the affairs of the master of the recipient, and makes the receipt or gift of any such thing by or to any agent or servant a crime. It has always been immoral: for centuries it has been recognised by the Courts as illegal; the recent Act has made it a crime.

I see that some seedsmen put forward the suggestion that the sums which they have paid to gardeners have been given not as an inducement to favour the donor, but as a reward for the care bestowed by the gardener on the seeds supplied by the seedsman; but the pretext appears to me very thin, and such as could deceive no one who does not wish to be deceived. What means has the seller of seeds to know what care is bestowed by my gardener on his particular seeds? Is the gratuity proportioned to that care, or to the amount of the order received. What right has the seedsman to induce my gardener to give special care to his seeds when, perhaps, I am far more interested in the seeds supplied by some other vendor or sent home by a travelling friend? I should regard any such interference by the seedsman with the conduct of my gardener as a great piece of impertinence. The worst kind of bribe is that which is the so-called discount or commission, that is a percentage, a sum which increases with the amount of the orders given. The direct tendency of such a gift is to tempt the gardener to neglect his duty in several ways. His duty to point out any defects in the goods supplied to his master; to give, if required, independent advice as to the seedsman to be employed; to order or advise the ordering of no more seeds or plants than the garden requires. These gifts have a tendency to make the gardener blind to the defects in the goods, to prefer the bribing seedsman over the honest one, to order or advise the ordering of more goods than are required. No nonsense about the gardener's care can obscure these effects of the bribe.

May I be permitted to express my earnest hope that the nurserymen and seedsmen of this country will succeed in purging their business of this stain of corrupt dealing? I fear that bribery of gardeners has been, and is, very widespread in the trade, and the passing of the Act of last year puts a strong obligation on all traders to strive after a greater purity than has hitherto prevailed. The nurseryman's business is one in which the orders are generally given through, if not by, the servants, and it is therefore one peculiarly liable to this form of corruption. Those who are eager in favour of morality in trade transactions have to do what they can to overcome the opposition of two classes: the first is the class who derive actual profit from the corrupt practices; the second, and, perhaps, the larger class, are those who think it idle and foolish to be too particular, who do not care for honesty or morality in business over much, who think it fussy, and perhaps pharisaical to interfere in such matters.

I am, Sir,

Your obedient servant,

EDW. FRY.

Failland, December 10, 1907.

SOCIETIES.

NATIONAL ROSE.

DECEMBER 12.—The thirty-first annual general meeting of the members of this society took place on the above date at the Westminster Palace Hotel. The president, Mr. E. B. Lindsell, presided over a good attendance. Mr. Edward Mawley, honorary secretary, read the

REPORT OF THE COMMITTEE

for the past year. We make the following abstracts from this interesting document:—

The Metropolitan Exhibition, now one of the recognised attractions of the London season, again took place, by the kind permission of the president and council of the Royal Botanic Society, in their gardens in Regent's Park an ideal spot for a Rose show. It was held on July 4 and presented one of the largest displays of Roses the society has yet brought together, while its varied character was well maintained. Owing, however, to the cold and sunless weather in June, the general quality of the blooms of the "exhibition" varieties did not reach the high standard of excellence seen on some previous occasions. For the third year in succession, Her Majesty the Queen, the Royal Patroness of the society, paid a private visit to the show soon after it was opened—an honour greatly appreciated by all present on that occasion.

The provincial exhibition was held at Saltair, in Yorkshire, on July 16, in conjunction with the Saltair, Shipley and District Rose Society. This proved in every way a most successful meeting. It was the largest show the society has ever held in the provinces.

The autumn show, the fourth of the series, took place, by the kind permission of the Royal Horticultural Society, in their fine hall in Vincent Square, Westminster, on September 24. Favoured by the dry and sunny weather of the early autumn, this show also proved an unqualified success. Both as regards the extent of the display, and the quality of the exhibits, it was far in advance of either of the three previous autumn exhibitions.

The three five guinea silver cups, presented to the society by Mr. W. E. Nickerson, of Cambridge, Massachusetts, U.S.A., for the raisers of the best Hybrid Perpetual, the best Hybrid Tea, and the best Tea Rose for general cultivation, sent out in 1906, or subsequently, were awarded in April last by a vote of the committee as follows:—To Mr. Peter Lambert, of Trier, in Germany, as the raiser of the best Hybrid Perpetual Rose "Frau Karl Druschki." To Messrs. A. Dickson & Sons, Ltd., Newtownards, Co. Down, Ireland, as the raisers of the best Hybrid Tea "Dean Hole." To Messrs. Souper-et-Notting, of Luxembourg, as the raisers of the best Tea "Madame Jules Gravereaux," complying with those conditions. The thanks of the committee are greatly due to Mr. Nickerson for the gift of these cups, and also for originating such a very interesting and helpful competition. Mr. Nickerson has since promised to present the society with twelve more silver cups for the raisers of other specially good Roses for ordinary garden purposes which will be awarded by the committee during the course of the ensuing year.

The first issue of the "Rose Annual" was distributed to members in February last, and appears to have been much appreciated. It is hoped to improve and extend the usefulness of this publication, and any suggestions to that end will be welcomed. The "Rose Annual for 1908" and the society's new handbook on the "Enemies of the Rose" are now in course of preparation, and will be sent to the members in February next.

The subscription lists of both the Dean Hole and the D'Ombra Memorial Funds have now been closed. The die for the Dean Hole medal is completed, and the D'Ombra Cup was for the first time competed for at the Metropolitan Show in the class assigned for it, viz., the leading class for Teas, open to nurserymen.

In order to further encourage the exhibitors in the small amateur classes at the Metropolitan Exhibition, where the number of competitors had become very large, new classes were introduced into the schedule. The committee regard the exhibitors in these small classes with special interest, as it is from their ranks that the exhibitors in the larger classes are recruited.

Three Rose and other horticultural societies have become affiliated during the year, bringing up the total number of affiliated societies to 47.

The committee record with much regret the deaths during the past year of some of its oldest and most prominent members. Among these must be mentioned Dr. Maxwell T. Masters, F.R.S., a vice-president of the society, and at all times one of its warmest supporters; Mr. A. Slaughter, for many years a member of the committee, an enthusiastic exhibitor, and winner in 1883 of the Amateur Champion Challenge Trophy; Mr. John Bateman, a member of the committee, and for some years the most successful exhibitor in the classes for Roses grown within eight miles of Charing Cross; Mr. R. B. Cater, who will be best remembered for his services in connection with the society's visit to Bath in 1898.

FINANCE.

Owing to the unfavourable character of the weather on the show day, the amount received in gate-money at the Royal Botanic Show was not quite as large as in the previous year; while the printing expenses were unusually heavy, owing to the cost of the new official catalogue. Nevertheless, as will be seen by the statement below, the balance in hand at the end of the year (after placing £100 to the reserve fund) has been slightly raised. The receipts from all sources during the past year, including a balance from the previous year of £384 12s. 11d., amounted to £2,244 7s. 3d., and the expenditure to £1,052 17s. 11d., leaving a balance in the treasurer's hands of £2,291 9s. 4d. The reserve fund now stands at £300.

MEMBERSHIP.

During the year 577 new members have joined the society, or a greater number than in any previous year,

which brings up the total number of members, allowing for the losses by resignation, &c., to 2,484.

INCREASE IN MEMBERSHIP SINCE 1902.

	1902	1903	1904	1905	1906	1907
Number of members	890	1,004	1,335	1,737	2,034	2,484
Increase since previous year		114	331	403	297	450

ARRANGEMENTS FOR 1908.

The Metropolitan Exhibition will again be held in the Royal Botanic Gardens, Regent's Park, the date fixed for the exhibition being Friday, July 3.

The Provincial Show will take place at Manchester, on Tuesday, July 21, in the grounds of the Royal Botanical and Horticultural Society of Manchester, in conjunction with the White City, Limited, the present lessees of those gardens.

Arrangements have again been made with the Royal Horticultural Society to hold the autumn show in the Royal Horticultural Hall, Vincent Square, Westminster. The date of the show will be rather earlier than in the past autumn, viz., Thursday, September 17.

MEMBERS' PRIVILEGES.

Members subscribing one guinea will be entitled to six 5s. tickets, and subscribers of half-a-guinea to three 5s. tickets of admission to the society's Metropolitan Exhibition; or, if preferred, any of those tickets may be used instead for the society's Provincial Show at Manchester. In addition to this each member will receive, in proportion to his subscription, either four or two tickets for the society's autumn Rose Show to be held in the Royal Horticultural Hall, Vincent Square, Westminster. New members on joining the society will also receive copies of the following publications:—The "Handbook on Pruning Roses," the new "Official Catalogue" issued last year, the revised edition of the "Hints on Planting Roses," issued in November last, and the "Report on the Constitution of Rose Soils." Also, in February next, an entirely new work on the "Enemies of the Rose," and the "Rose Annual for 1908" will be sent to all members of the society. Members alone are allowed to compete at the shows of the society. They will be entitled to purchase tickets for their friends for the Metropolitan Exhibition at reduced prices.

The adoption of the report and financial statement having been moved by the president, and seconded by a member, there followed a short discussion. Mr. Frank Cant alluded to the extraordinary success of the society, and said that this was partly due to the step which was taken when the society determined to leave the Crystal Palace and hold their exhibitions in the Temple Gardens, and subsequently in the gardens of the Royal Botanic Society. But it was due in some measure also to the enlightened and progressive policy the society had recently followed, Mr. Cant referring particularly to the publications that had been issued.

The Rev. J. H. Pemberton drew attention to the large increase in the number of members, and suggested that the society should consider whether it would not be advisable to appoint a paid manager for the shows; one that would go to the place of exhibition a day or even two days previously, and remain after the exhibition until all the flowers were removed. He thought that Mr. Mawley should be consulted on this question. The president said that the committee had power to make such an appointment as was suggested, and they would not doubt give the subject their attention. The report and financial statement were accepted unanimously.

A NEW REGULATION.

Mr. E. J. Holland then moved that the new regulation, of which notice had been given, should be adopted. It has been considered necessary, owing to circumstances that have occurred during the past season, and is intended for the purpose of discouraging exhibition by those who have no wish to take a personal interest in the matter. There arose considerable discussion in regard to the proposal, and an amendment was proposed to the following effect:—"That amateurs must not have any trade assistance in the care, selection, or staging of their blooms for 24 hours previous to the show." Eventually the original resolution was strengthened, and it was adopted unanimously, the term being as follows:—"The exhibits of amateurs must not be staged or prepared for staging by trade growers or their assistants."

A cordial vote of thanks having been offered to the officers and committee for the past year, Mr. Mawley said that the aim and end of Rose-growing used to be that of exhibiting, but now if the policy of the society had to be stated in a few words, it would be, "Roses for the million." The election of the officers and committee for 1908 concluded the business of the meeting.

THE DINNER.

In the evening the members and friends assembled at the annual dinner, which took place at the Hotel Windsor. Mr. E. B. Lindsell pre-

sided also at this function, and there was a large attendance, including many ladies, the chief guests being Mrs. Hole and her son, Mr. Hugh Hole.

On rising to propose the toast, "The National Rose Society," the president said that the society had so successfully encouraged the cultivation of Roses that they were now to be seen in all gardens, and generally they were regarded as one of the more important features of the garden. Formerly, this was not the case; Roses were grown in most big gardens, but they were regarded as Lilacs, Viburnums, or other shrubs, and in many cases were pruned with shears! Mr. A. Tate, one of the vice-presidents of the society, had shown them how a Rose garden should be laid out to give the best results. Mr. Lindsell concluded a very happy speech by some humorous remarks as to measures he had taken to provide for his older plants—"old warriors," these having been removed to a local churchyard, where their late owner could call upon them from time to time and satisfy himself that they were happy.

Mr. Edward Mawley, honorary secretary, responded to this toast, and at the outset expressed the gratification of those assembled that Mrs. Hole and Mr. Hugh Hole had honoured them by their presence. The late Dean Hole was one of the founders of the society, and president for 27 years. Mr. Mawley remembered going to the memorable meeting when Dean Hole presided, and the society was established, the late Rev. Mr. D'Ombrian acting as secretary from the first. Dean Hole's book, *A Book About Roses*, had undoubtedly been instrumental in making more rosarians in years gone by than any other book, and he (Mr. Mawley) believed that the work had passed through more editions, and had had a larger circulation than any other horticultural book. Passing to the subject of the society itself, Mr. Mawley said that they had had a record year; at Saltaire they had a record provincial show, the metropolitan exhibition was a splendid one and of record size, the income had been a record, the number of new members was a record, and that evening they had a record attendance for their annual dinner! The one great aim of the society was to give instruction to those who wish to grow Roses, and make that instruction understandable to the youngest cultivator. This was not easy. Only the other day he was asked to explain the difference between a bush and a dwarf Rose plant. If ever the society published aphorisms they might include such as those following: "A good dwarf Rose needs no lush"; "A standard is so called because it cannot stand hard treatment"; "A pillar Rose is a tower of strength as long as the atmosphere is very calm."

The toast of "The Visitors" was proposed by Mr. C. E. Shea, late president of the society. He referred to the particulars concerning the late Dean Hole already mentioned by Mr. Mawley, and added that when the society lost him as its president, he (Mr. Shea), knew how difficult it was to fill the void so caused. But Dean Hole's work on behalf of the Rose commenced long before the establishment of the National Rose Society, and he had previously held a very successful exhibition at the St. James's Hall. He was a man of very wide sympathies, and though his interest was principally and chiefly in Roses, it was not exclusively in Roses. They remembered him well as an orator who had the power of touching the hearts of men, and this was due to his great humanity. His supreme love of the Rose was one of the most marked characteristics, and in the opening paragraph in his well-known book was the secret of his success. "He who would have beautiful Roses in his garden must have beautiful Roses in his heart." Mr. Shea thought that the Rose had the power of invoking such a love as none other flower can excite. The toast was coupled with the names of Mr. Hugh Hole and the Rev. J. Carpenter Robinson, and was received with the greatest enthusiasm.

Mr. Hugh Hole, in returning thanks for Mrs. Hole and himself, said, as one of the directors of the *Gardeners' Chronicle*, he wished to refer to the great loss they had sustained during the year by the death of Dr. Masters, late Editor of that journal, and a vice-president of the National Rose Society. He (Mr. Hole) had the greatest interest in the objects of the National

Rose Society, because they were connected with the extension of the most beautiful and purest of pleasures. Not everybody could possess the fastest motor-car in the world, or slaughter the largest number of pheasants even if they wished to, but most people might have a small bed of Roses. Mr. Hole first longed for a garden after his companionship with his servant in South Africa during the late war. The man was a Londoner, and possessed but a very small garden, but his frequent conversations about this little garden and the plants it contained showed clearly enough that he longed to be again with what had given him the greatest pleasure in life. Mr. Hole quoted the following lines, which, he said, were written by a former headmaster of Clifton College:—

A garden is a lovesome spot,
God wot.
Fringed pool,
Fern grot,
Rose plot,
And yet the fool
Hath said that God is not.
What, not God, in gardens
When the eve is cool?
Nay; but I have a sign,
'Tis very true God walks in mine.

Mr. Hole stated, amid cheers, that he had recently taken over his father's garden at Cauntton, and he intended to study gardening and Rose-growing, and some day he might come with his boxes of Roses to the N.R.S. shows. In acknowledging the kindness of the society in inviting his mother and himself to be present that evening, Mr. Hole said that his mind went back to a scene which occurred some years ago when a regiment was drawn up and a young officer, having been commanded by Lord Roberts to thank the men for services rendered, addressed them as follows: "I can hardly speak to the regiment my father commanded and in which I was born." However, on behalf of his mother and himself, he thanked them from the bottom of his heart for having kept green the memory of him who for so many years was their president and friend. The Rev. J. Carpenter Robinson also responded.

The remaining toast of "The Chairman" was proposed by Mr. H. E. Molyneux (hon. treasurer), who truly said that for many years past Mr. Lindsell had occupied a unique position in the society as chief judge, as well as chief exhibitor.

BIRMINGHAM AND MIDLAND COUNTIES CHRYSANTHEMUM.

DECEMBER 12.—The annual dinner of this society was held on the above date. Mr. W. Jones presided over a large company.

In proposing the health of the society and its officers, Mr. John Pope remarked upon the fact that the first time their exhibition was held away from Edgbaston it was held at the Exchange Assembly Room. That was many years ago, but he could remember even an earlier exhibition that was held in the Corn Exchange. On that occasion a surgical instrument maker named Webb exhibited a Chrysanthemum named *Fleur de Marie*; and although that was more than 50 years ago, he believed the variety was still in cultivation.

Mr. T. Humphreys, who responded, said it was particularly gratifying to know that the society was appreciated. It received support from such widely separated counties as Sussex, Surrey, and Devon. Exhibitors brought their best to Birmingham, to the great advantage not only of the professional grower, but also of the enthusiastic amateur. A gentleman who had visited Japan informed the speaker that the blooms seen in Bingley Hall were superior in regard to size, substance, colouring, and form to those he saw in that Eastern country. Mr. Humphreys pointed out that their exhibition was the most representative, extensive, and varied held in the provinces during the autumn months. Referring to the financial position of the society, the speaker appealed for a larger list of subscribers. Birmingham could not do without the Chrysanthemum show.

Other speakers included Messrs. W. B. Latham, R. Sydenham, W. Spinks, and A. Cryer.

The toast of Mr. J. Hughes, the late secretary, was received with enthusiasm. Mr. Hughes, in his response, said he would always be pleased to give advice or assistance which might be of benefit to the society.

NATIONAL AMATEUR GARDENERS'.

DECEMBER 10.—The annual dinner of the National Amateur Gardeners' Association took place at the Holborn Restaurant on the above date, Mr. T. W. Sanders, editor of *Amateur Gardening*, occupying the chair. The chief prizes won during the past year were presented to the winners in the course of the proceedings.

Obituary.

EDWARD WARD.—We regret to record the death of this well-known gardener on the 9th inst. For the past 12 months he had suffered from ill-health, but was not totally incapacitated until the past few weeks. The late Mr. Ward was born at Regent's Park, London, on August 20, 1848, his father being at that time head gardener to George Bishop, Esq. He commenced his gardening career at the age of 14 as an apprentice in the old Kitchen Gardens, Hampton Court Palace, under his father. From Hampton Court he went to Chiswick House Gardens, the seat of the Duke of Devonshire, where he stayed for over three years, and he next served in the Royal Horticultural Society's Gardens at South Kensington, under the late Mr. George Eyles. He was later at Chatsworth, as foreman of the fruit forcing department, which position he held for about four years, leaving to become head gardener to John Rhodes, Esq., Potterneton, Leeds. He was head gardener to the Right Hon. Lord Windsor (now Earl of Plymouth) at Hewell Grange, Redditch, for a period of about 16 years, eventually leaving that place to engage in farming, but finding that did not answer, he resumed his old occupation, and engaged as gardener to Mrs. Rylands, of Longford Hall, Stretford, Manchester, 13 years ago, which post he held till quite recently. The deceased leaves a family of seven daughters, the youngest of whom is 16 years of age. His wife pre-deceased him some 14 years since, and at his request his remains were interred on Friday, December 13 last, in the same grave in which she was buried at Baslow, Derbyshire. The late Mr. Ward was an occasional contributor to the *Gardeners' Chronicle*.

GEORGE BETHELL.—We regret to record the sudden death of this nurseryman on the 14th inst. at the age of 59 years. The deceased gentleman carried on an extensive business as a nurseryman at East Waylands, Wood End Green, Hayes, near Uxbridge. Formerly he was manager of the extensive nurseries of Messrs. W. Whiteley and Co., Hillingdon.

LAW NOTE.

AMERICAN GOOSEBERRY-MILDEW (PROHIBITION OF IMPORTATION OF BUSHES) ORDER OF 1907.

The following fresh paragraph is to be inserted in the Importation Code. [See reprint on p. 416 of *Gardeners' Chronicle*, December '14.]

501. The landing in or introduction through the post into Great Britain of any Gooseberry bush or Currant bush, or of any cutting, stock, or seedling, or any part of such bushes except the fruit, brought from any place out of Great Britain is prohibited by the American Gooseberry-Mildew (Prohibition of Importation of Bushes) Order of 1907, issued by the Board of Agriculture and Fisheries on November 29, 1907. In the event of any importation or suspected importation of Gooseberry or Currant bushes from abroad coming under the notice of the officers the bushes are to be detained and the Board of Agriculture and Fisheries are to be at once communicated with by telegraph in order than an inspector may be sent by that department to identify their character. (Slips for the amendment of the Code will be issued in due course.)

Attention is directed to Sub-section (2) of Section 1 of the Order which relates to importations of bushes on or before the 31st proximo.

By Order of the Board,

R. HENDERSON.

Custom House, London,
December 11, 1907.

MARKETS.

COVENT GARDEN, December 18.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Ed.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Acacia (Mimosa), dozen bunches	8 0	9 0	Lilium lancifolium, album	2 0	2 6
Anemones, doz. bchs.	2 0	3 0	— "tigrinum	1 6	2 0
Azalea, white, per dozen bunches	3 0	4 0	Lily of the Valley, p. dz. bunches	8 0	12 0
Bouvardia, doz. bchs.	6 0	8 0	— extra quality	12 0	15 3
Calla a-thiopica, per dozen	3 0	5 0	Marguerites, white, p. dz. bunches	2 0	3 0
— Guernsey	2 0	3 0	— yellow, per dz. bunches	2 0	3 0
Camellias, per dz.	2 0	2 6	Mignonette, per dz. bunches	2 0	3 0
Carnations, per dozen blooms, best American	3 0	4 0	Narcissus, paper white, per doz. bunches	1 0	1 6
— second size	1 6	2 0	— Soleil d'Or, per dozen bunches	3 0	3 6
— smaller, per doz. bunches	9 0	12 0	Odon to glossum crispum, per dozen blooms	2 6	3 0
Cattleyas, per doz. blooms	8 0	10 0	Pelargoniums, show, per doz. bunches	4 0	6 0
Chrysanthemums, best specimen blooms, per dz.	4 0	6 0	— Zonal, double scarlet	4 0	6 0
— selected blms., per dozen	2 0	3 0	Poinsettias, per dz.	8 0	10 0
— medium, doz. bunches	12 0	18 0	Ranunculus, p. dz. bunches	8 0	12 0
Cyclamen, per doz. bunches	4 0	6 0	Roses, 12 blooms, Niphetos	2 0	4 0
Cypripediums, per dozen blooms	2 0	2 6	— Bridesmaid	3 0	6 0
Daffodils, p. bunch	1 0	1 3	— C. Testout	2 0	3 0
Eucharis grandiflora, per doz. blooms	2 0	3 0	— Kaiserin A. Victoria, per dozen blooms	2 6	4 0
Euphorbia Jacquiniflora, p. bch.	1 6	2 0	— Mrs. J. Lang	4 0	6 0
Gardenias, per doz. blooms	2 6	3 6	— C. Mermet	3 0	6 0
Gladioli, various hybrids, per dz. spikes	1 0	2 0	— Liberty	2 0	6 0
— Brechtleyensis	1 6	2 0	— Mad. Chateau Safrano (French), per dz. bunches	9 0	12 0
Hyacinths, Roman, per dz. bunches of 12 blooms	6 0	10 0	Spirea, doz. bchs.	5 0	8 0
Lilac (French), per bunch	3 0	4 0	Tuberose, per dz. blooms	0 4	0 6
Lilium auratum	3 0	4 0	Tulips, dz. bunches	1 0	1 6
— longiflorum	3 0	6 0	Violets, p. dz. bchs.	1 0	2 0
			— special quality	2 6	3 0
			— Parmas, p. bch.	2 0	4 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Adiantum cucum-tum, dz. bchs.	0 6	0 0	Hardy foliage (various), per dozen bunches	3 0	9 0
Asparagus plumosus, long trails, per doz.	8 0	12 0	Holly, per bunch	1 0	3 0
— medium, bunch	1 0	2 0	Iris, p. dz. bunches	5 0	6 0
— Sprengerii	0 6	1 0	Ivy-leaves, bronze	2 0	2 6
Berberis, per doz. bunches	2 0	2 6	— long trails, per bundle	1 0	2 0
Croton leaves, per bunch	1 0	1 3	— short green	1 6	2 6
Cycas leaves, each Fern, English, per dozen bunches	1 0	2 0	per dz. bunches	4 0	5 0
— French, per dz. bunches	1 0	3 0	Myrtle (English), small-leaved, per dozen bunches	4 0	6 0
Galax leaves, per doz. bunches	2 0	2 6	— French, per dz. bunches	1 0	1 6
			Pernettya, p. bunch	0 6	0 9
			Smilax, p. dz. trails	2 0	3 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Ampelopsis Veitchii, per dozen	6 0	8 0	Erica nivalis, per dozen	12 0	15 0
Aralia Sieboldi, dz.	4 0	6 0	— hyemalis	12 0	18 0
— larger	9 0	12 0	— melanthera	12 0	18 0
— Moseri, per dz.	6 0	12 0	Euonymus, per dz.	4 0	9 0
Araucaria excelsa, per dozen	12 0	30 0	Ferns, in tiumpbs	8 0	12 0
Aspidistras, green, per dozen	18 0	30 0	— in small and large 60's	12 0	20 0
— variegated, per dozen	30 0	42 0	— in 48's, per dz.	4 0	10 0
Asparagus plumosus nanus, doz.	9 0	12 0	— in 32's, per dz.	10 0	18 0
— Sprengerii, dz.	8 0	10 0	Ficus elastica, dz.	9 0	12 0
— tenuissimus	9 0	12 0	— repens, per dz.	4 0	6 0
Azalea indica	30 0	42 0	Hyacinths (Roman), per dozen pots	12 0	15 0
Begonia Gloire de Lorraine, p. dz.	8 0	15 0	Kentia Belmoreana, per dozen	18 0	30 0
Bouvardias, per dz.	6 0	8 0	— Fosteriana, per dozen	18 0	30 0
Callas, per dozen	10 0	12 0	Latania borbonica, per dozen	12 0	18 0
Chrysanthemums, per dozen	9 0	12 0	Lilium longiflorum, per dz.	21 0	25 0
— best disbudbed	18 0	24 0	— lancifolium	12 0	18 0
Clematis, per doz.	8 0	9 0	Lily of the Valley, per dozen	18 0	30 0
Cocos Weddelliana, per dozen	18 0	30 0	Marguerites, white, per dozen	6 0	8 0
Crotons, per dozen	18 0	30 0	Poinsettias, per dz.	9 0	12 0
Cyclamen, per doz.	9 0	12 0	Selaginella, per dz.	4 0	6 0
Cyperus alternifolius, dozen	4 0	5 0	Solanums, per doz.	6 0	12 0
— latus, per doz.	4 0	5 0	Spirea japonica, dz.	9 0	15 0
Dracenas, per doz.	9 0	24 0	Veronicas, per dz.	4 0	6 0
Erica gracilis, doz.	12 0	18 0			

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples (English), per bushel:			Grapes, English		
— Wellington	5 0	7 0	— Muscats, p. lb.	2 0	4 0
— Northern Greening	4 0	5 6	— Canon Hall, per lb.	2 0	5 0
— Newton Wonder	5 0	6 0	— Belgian Gros Colmar, per lb.	0 8	1 0
Bramley's Seedling	5 0	7 0	— Almeria, per barrel	10 0	20 0
— Lord Derby	5 0	7 0	Lemons:		
— Peasgood's Nonsuch	5 0	7 0	— Malaga, case...	14 0	15 0
— King Pippins	4 6	6 0	— Messina, case	7 0	15 0
— Blenheim Pippin	4 6	5 6	— Naples, p. case	17 0	24 0
— Cox's Orange Pippin, sieve	7 0	14 0	— Lychees, per box...	1 0	—
— Nova Scotian, per barrel	14 0	15 0	— Mandarinines, per box	0 10	1 3
Ribston Pippin	15 0	16 0	Mangoes, per doz.	4 0	8 0
Gloria Mundi	15 0	16 0	Medlars (English), sieve	3 6	—
— Blenheim's	15 0	16 0	Nuts, Cobs (English), per lb.	0 3	—
— King's	15 0	16 0	— Grenobles Walnuts, per bag...	7 6	8 6
— New York Imperialists	20 0	21 0	— Almonds, bag	42 6	—
— Canadian, per barrel	16 0	18 0	— Brazils, new, per cwt.	70 0	—
— Northern Spy...	16 0	18 0	— Barcelona, per bag	32 6	—
— King of the Pippins	16 0	18 0	— Cocoa nuts, 100	11 0	16 0
Baldwin	15 0	17 0	Chestnuts:		
— N. Greening...	16 0	18 0	— Italian, per bag	12 0	15 0
— Ribston Pippin	16 0	17 0	— Redon, per bag	7 0	9 0
— Blenheim Pippin	19 0	21 0	Oranges (Jamaican), per case	7 6	9 0
— Californian:			— Almeria, case...	10 6	12 0
— Newtowns, per box	8 0	10 0	— Valencia, case	7 0	15 0
— "Oregon" Newtowns, per box	12 0	14 0	— Denia, p. case	12 0	20 0
Apricots (Cape), p. box	3 0	6 0	— Jaffas, per box	6 6	7 6
Avocado Pears, per dozen	4 0	12 0	— Californian Navel, p. case	11 0	12 0
Bananas, bunch:			Pears (English), Catullac, per bushel	4 6	6 0
— No. 2 Canary	8 0	—	— Doyenné du Comice, per dozen	4 0	9 0
— No. 1	9 0	—	— Pitmaston Duchess, per dozen	2 0	4 0
— Extra	10 0	—	— French, Doyenné du Comice, per crate	10 0	11 0
— Giants	11 0	15 0	— Beurré Magnifique, per box	10 0	—
— Jamaica	5 0	5 6	— Catillac, Dutch, per basket	2 6	—
— Loose, per dz.	0 9	1 3	— per barrel	10 0	—
Cranberries, p. case	6 6	7 6	— Glout Morceau (French), per box	8 0	10 0
"Custard" Apple (Anona) per doz.	4 0	14 0	— Winter Nelis, per box	16 0	18 0
Dates (Tunis), doz. boxes	4 6	4 9	Pineapples, each	2 6	5 0
Grape Fruit, case	6 0	8 0			
Grapes (English), Alicante, per lb.	0 6	1 2			
— Gros Colmar, per lb.	0 8	1 6			

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes (French), per dozen	3 6	4 0	Lettuces, Cos (French), per dozen	5 9	6 0
Asparagus, Paris Green, bundle	4 0	4 6	Mint, doz. bunches	0 9	1 0
— Sprue, bundle	0 5	0 6	Mushrooms (house), per lb.	0 10	1 0
Beans, French, per packet	0 3	0 4	— buttons, per lb.	0 10	1 0
— Guernsey, p. lb.	0 6	0 7	— "Broilers" p. lb.	0 8	0 9
— Madeira, per basket	2 0	2 6	Mustard and Cress, per dozen pun.	1 0	1 6
Beetroot, bushel	1 3	1 6	Onions (Spanish), per case	5 0	5 6
Brussel Sprouts, sieve	1 0	1 6	— Dutch, per bag	4 0	—
Cabbages, per doz.	0 6	0 9	— pickling, per bushel	2 0	2 6
— Greens, bag	1 0	—	Parsley, 12 bunches	1 6	1 9
— red, per dozen	2 0	—	— 1 bushel	1 0	1 6
— Savoy, per tally	3 0	—	Potatoes (French), new, per lb.	0 3	—
Carrots (English), washed, p. bag	2 6	—	— Tenerife, cwt.	16 0	17 0
— French (new), per pad	3 6	3 9	Rhubarb (English), dozen bundles	1 6	—
Cauliflowers, p. dz.	1 6	2 0	Salsify, per dozen bundles	3 6	—
— per tally	7 0	10 0	Seakale, per dozen punnets	12 0	14 0
Celeriac (French), per dozen	1 6	1 9	Spinach, English, per bushel	2 0	—
Celery, washed, per dozen	0 8	10 0	Tomatoes, selected, per dozen lbs.	2 6	3 6
Chicory, per lb.	0 3	—	— small selected, per dozen lbs.	2 3	2 6
Chow Chow (Sichuan edule), p. dozen	3 0	—	— Tenerife, per bundle of four boxes	11 0	14 0
Cucumbers, per dz.	2 0	3 6	Turnips (English), doz. bunches	2 0	3 0
Endive, per dozen	1 6	2 0	— per bag	2 6	—
Horseradish, foreign, per doz. bundles	10 0	12 0	Watercress, per doz. bunches	0 4	0 6
Leeks, 12 bundles	1 0	1 6			
Lettuce (French), per dozen	1 0	1 2			

REMARKS.—The first consignment of Apricots from the Cape arrived during the past week, which is considerably earlier than usual. Rhubarb from the Yorkshire district is now obtainable. The prices of American Apples are so low that large quantities are being placed in "cold storage" until the New Year. Seedless Oranges from California are of very fine quality, and are selling freely. Bananas are much dearer, and there is a brisk demand for bunches of best quality in ripe condition. There is a slight improvement in the trade for English Grapes. Holly and Mistletoe are fairly plentiful this season, but the demand for these is decreasing each year. P. L., Covent Garden, Wednesday, December 18, 1907.

POTATOES.

Kents, 3s. 6d. to 5s. per cwt.; Lincolns, 7s. to 9s.; Blacklands, 7s. to 8s.; Manxons, 8s. to 9s.; Lincoln Maincrop, 9s. to 11s.; Dunbar Maincrop, 11s. to 12s.; Dunbar Up-to-Date, 11s. to 12s. per ton.

Imperators, 1s. 9d. to 2s. 3d.; Dutch Magnums, 2s. 3d. to 3s. 6d. per bag. Trade is fairly only, and no increase will be seen until colder weather sets in. Owing to the heavy rains the tubers are very dirty; at the same time carting is impossible in places, and causing short supplies from different districts. Best samples are in good demand. J. D. C., Covent Garden, December 18, 1907.

COVENT GARDEN FLOWER MARKET.

The Christmas trade has commenced, and although much is said about the depression of trade generally, more business is being done this year than ever. Increased prices are asked for some species of plants in pots, but as a rule most growers will book orders at ordinary prices. Supplies of best Lilliums in pots were short yesterday (Tuesday) morning. Azalea indica, principally pink, scarlet, and white-flowered varieties, promise to be plentiful this Christmas. Genistas generally are of inferior quality, and buyers are not keen in purchasing them, though they are not grown in so high a temperature as are those marketed later on. Erica hyemalis is still supplied in well-flowered plants, and is a little more valuable. Marguerites, Poinsettias, and Begonia Gloire de Lorraine are all well supplied. The white Turnford Hall Begonia does not sell so readily as it did when it was first offered for sale in the market. Since that time the quantity of other white flowers has increased. Among Chrysanthemums the variety Jardin des Plantes, though one of the oldest, is still one of the best. I have known it for over 40 years, but I have never seen it in better condition than it has been this season. Framfield Pink is another variety which has been good in pots. Other good kinds are A. J. Balfour (which some growers discarded a few years ago), Allman's Yellow, Niveum, Golden Age (or Market Gold), and Heston White.

Cyclamen are not so good in quality as those seen in past years, and their prices have fallen. A buyer remarked on Tuesday that a few years ago he could make better profits on those for which he gave 30s. per dozen than on those which now cost 12s. for the same quantity. Primulas also are far inferior to those sent in former years, when Mr. Sawyer and Messrs. J. and J. Hayes cultivated them. Lilliums have increased in price. A week ago they were difficult to dispose of for 15s. per dozen; yesterday they were all sold early at 20s. per dozen, although they were of the same quality as the earlier ones. Lily-of-the-Valley is expected to be dearer early next week. Roman Hyacinths in pots and in boxes have been very good, and supplies for next week may be good, but their value is certain to advance a little. Tulips in boxes are now abundant, and are likely to be cheaper rather than dearer. On Tuesday I paid 10s. per dozen for Solanums. Later in the morning a friend asked me where he could find some cheap plants, and I directed him to a man who had previously offered me plants at 3s. per dozen. The same thing is noticed all through the market. Erroneous opinions are often formed from the prices of plants offered in the streets. When packed together on a barrow they seem all right, but they are not equal to the best in the market.

CUT FLOWERS.

Many growers are willing to book orders for Christmas at reasonable prices. Callas are always in demand for Christmas, and though they have been abundant and cheap they are sure to advance a little in value. Lilliums are very uncertain. On Tuesday 4s. was asked for the same quality flowers that were making 2s. 6d. last Saturday. Eucharis have been plentiful. I find with some growers they have come in too early for the Christmas trade. Camellias may be dearer owing to many former growers having ceased to grow them. White Azalea has been plentiful and is likely to remain at normal prices. Bouvardia, Double Primula, Scarlet Pelargonium and Tuberoses are not likely to vary much. Supplies of imported flowers for the Christmas season may be uncertain. Flowers of a beautiful Acacia are arriving from Italy. The shoots have glaucous leaves, and the inflorescences are in racemes. Narcissus of various sorts have been very cheap. Violets vary. Parmas make from 1s. 6d. to 4s. per bunch. Ranunculus are now very good; the variety with a green centre sells readily. The pink Anemones are now much better than earlier ones. Roses from France arrive in good condition. Papa Gontier and Safrano are the most popular sorts.

The market is well supplied with all the usual Christmas requisites. Holly is remarkably good, but for best quality high prices have to be paid. Mistletoe is plentiful, and has been offered at low prices, yet it is doubtful if it will be offered so cheaply on Monday or Tuesday.

Christmas trees may be had in all sizes, from those not much more than a foot high to those 20, or perhaps 25 feet high, and at prices varying from 6d. to 15s. each.

Large wagon-loads of Evergreens of all sorts are coming into the market.

A feature of the market at Christmas time is the variety of people seen. First there are the business men, who are there early and who buy quickly. Then there are others who have a little more time to spare and who try to buy their stocks at a lower price. Later in the morning are seen clergymen, nurses from all the London hospitals, Sisters of Mercy from Convents, and a large attendance of private persons who think they will save somewhat by purchasing at the principal market. A. H., Covent Garden, Wednesday, December 18, 1907.

TRADE NOTICE.

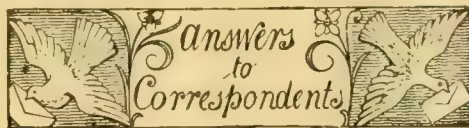
We are informed that the goodwill and stock of the old-established nursery and seed business known as Smith & Simons, Glasgow, have been purchased by Messrs. Peter Drew and James H. Parker, who will conduct the business at the same address and under the old title.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending December 18.

The highest wind for seven years.—The first few days of the week were warm, but since then moderately low temperatures have mostly prevailed. On the two warmest days the temperature in the thermometer screen rose to 49°, and on the coldest night the exposed thermometer indicated 11° of frost. The ground is at the present time of about average warmth at 2 feet deep, but about 1° colder than is seasonable at 1 foot deep. Since the month began rain has fallen on all but four days, and to the total depth of 3½ inches, which is nearly an inch in excess of the average rainfall for the whole month. During that period 17 gallons of rain water have come through the 2½ feet of soil in the uncropped percolation gauge, and 14 gallons through that on which short grass is growing. Both gauges are a yardsquare. The sun shone on an average for 1 hour 43 minutes a day, or half an hour a day longer than is usual at this season. The wind has been very variable in strength, the mean rate of movement in the windiest hour on one day being only five miles, whereas, on the previous day (the 14th), the mean velocity of the windiest hour amounted to as much as 28 miles—direction W.N.W. This was the highest wind I have recorded here since January, 1901, or for nearly seven years. Between 8 a.m. and 1 p.m. on that day the average velocity was 24 miles an hour. The mean amount of moisture in the air at 3 o'clock in the afternoon exceeded a seasonable quantity for that hour by 3 per cent. E. M., Berkhamsted, December 18, 1907.



BOOKS: H. D. We know of no periodical that would be suitable to you for the study of botany. If you can obtain the monthly parts of such a book as Kerner's *Natural History of Plants*, you would find this useful.

CELERY: C. C. The Celery is injured by millipedes. Occasional soakings of the soil with soot and water will drive the pest away from the plants. Lime should be worked into the soil when the crop has been removed.

CHIMONANTHUS FRAGRANS: H. V. W. The specimen should be replanted towards the end of February, at which time the vigorous shoots should be shortened. In order that as much light and air as possible may be admitted, care should be taken to remove all overcrowded, non-flowering growths near the centre of the bush. If the position is one exposed to sunshine, although not necessarily having a south aspect, the plant may be expected to yield a good display of flowers each winter.

CYMBIDIUM TRACYANUM: *Anxious*. You had better shift the plant at once into a much larger pot, using as compost turfy loam with a little dried, crushed cow-dung added. Continue to water the roots carefully, and in early spring apply weak liquid manure once each week. When the plant has gathered increased strength and has made more roots, you will not find any difficulty in getting it to flower.

DENDROBIUM CREPIDATUM: T. S. It is not natural for the pseudo-bulbs to decay at their bases in the manner shown in the example received. Plants of this section of Dendrobium grown in pots, however, are liable to decay in this way if kept on the staging among other plants after the resting season has commenced. This species, and others allied to it, grow best in comparatively small baskets, or pans, suspended from the roof. As soon as the pseudo-bulbs are fully completed each season, and the leaves turn yellow, the plants should be removed to a cooler house and be kept perfectly dry until the spring. If all the pseudo-bulbs on your plant are similar to the one sent, it is dead so far as the original centre is concerned, although if kept dry, growths may yet proceed from the healthy portions.

GARDENER'S NOTICE: J. H. It is entirely a question of the custom of the trade. In your position we do not consider you would be entitled to more than one week's notice.

PEARS: G. H. The fruits are kept at too high a temperature during the process of ripening. This causes the rapid growth of a fungus in the core of each fruit, which results in what is termed a "sleepy" condition, and this condition is followed by decay. The variety is probably Calebasse Grosse.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time; they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers.*

FRUITS: Wheeler & Son. 1, Lord Derby; 2, Old Nonsuch.—G. B. 1, Court of Wick; 2, Waltham Abbey Seedling.—R. Middleton. The bunch was much damaged. It resembles Canon Hall Muscat.—A. J. G. In appearance the fruit closely resembles Beurré Hardy, but in flavour it is worthless. Beurré Hardy is an excellent Pear. Has your fruit been frozen? If it has not, we are unable to recognise the variety.

PLANTS: H. T., Waterford. 1, Nephrolepis tuberosa; 2, Woodwardia radicans; 3, Pteris tremula; 4, Hedychium coronarium (so far as we can determine from a single leaf, without any description of the habit of the plant); 5, Tussilago Farfara variegata; 6, Dendrobium heterocarpum syn. D. aureum; 7, Adiantum formosum.—G. F. 1, Picea sitchensis; 2, Picea sp.; the specimen is not in a condition to assist accurate determination.—Felix. 1, Epidendrum polypulbon; 2, Vanda Roxburghii; 3, Aerides multiflorum; 4, Bletia verecunda; 5, Cœlia Baueriana; 6, Bulbophyllum; 7, Brassavola nodosa.—Scotland. Maxillaria grandiflora, Odontoglossum Adrianae and Lælia autumnalis.—J. W. F. Probably Callistemon speciosus, a member of the "Bottlebrush" genus.

PEAR TREES: S. H., Sevenoaks. The first season after planting fruit trees sometimes fail to grow satisfactorily, and for several reasons. The most frequent cause is that of planting late in spring, but trees which have not been moved for some years previously, and which therefore have in consequence fewer root-fibres, suffer the greater check, owing to the severance of many large roots. If the soil is not made firm about the roots at the time of planting, or if the soil is afterwards permitted to become dry, success in the first season cannot be expected. Your trees will probably recover during next season, and in order to cause the buds to break into growth evenly along the branches, each shoot should be pruned back to one-third its length. The main branches of the trees cannot be extended too quickly, but a certain amount of pruning will be necessary each season, in order that the trees may become furnished with suitable shoots and fruiting-spurs.

TOMATO LISTER'S PROLIFIC: A. C. We first saw this free-fruited variety in the nursery of Mr. A. Lister, Rothsay, in 1902, and were much impressed with its value. If you wish to know its parentage you had better write to Mr. Lister, who may be expected to know all about the origin of the Tomato he distributed.

VERONICA CUPRESSOIDES: *Lexden*. This species seldom flowers while in a small state, so that probably your plant is not old enough. In its native country it reaches a height of from 4 to 6 feet, but in this country it is very slow-growing, and requires a long time to attain anything like that size. You might try plants of it in a warm, sheltered position against a greenhouse wall, or similar warm site. Nearly all the New Zealand Veronicas thrive better near the sea than in inland localities.

COMMUNICATIONS RECEIVED.—R. C.—A. D.—Hampshire—A. H.—S. Reader—F. G. C.—H. A. J. J. R. P. & Sons—A. W.—F. M.—J. W.—T. C.—F. J.—J. V.—Haarlem—H. M. Veitch—B. Ashton—Grower—H. R. R.—G. M.—A. O.—C. H. P.—Employee—Dr. Otto—S. W. R. W.—T. Lunt—E. S.—R. T. H.—W. C.—H. J. C.—Saxon—A. F. D.—H. J. C.—S.—G. H.—J. C. & S. R.—A. R.—C. T. D.—A. D.—W. B.—T. F.—W. H. C.—A. H.—S. L. D.—C. W.—B. W. D.—C. S.—J. D. C.—A. M.—E. J. C.—H. W. W.—W. E. G., Jersey.



THE

Gardeners' Chronicle

No. 1,096.—SATURDAY, December 28, 1907.

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NOVELTIES IN HARDY
FLOWERING PLANTS.

WITH the advent of each New Year and the issue of the seedsmen's catalogues the progressive gardener scrutinises their contents with some amount of eagerness, in order to select any new subject which is likely to prove a valuable acquisition. Throughout the year the shows held at the Horticultural Hall and other places are watched with interest, and notes are made of varieties of plants that may be required later.

I propose to enumerate in this article only such plants as are suitable for the flower border, and that may be raised annually from seeds, but in the case of hardy perennials the annual seed-sowing is not always necessary. Amongst the many novelties and specialities, mention should be made of the new forms of Antirrhinums, for these are appreciable improvements on the older types. The variety Sunset is well named, for the prevailing colour is a fiery orange scarlet. Cottage Maid also commended itself to me for its pale shade of coral-pink, which is so effective in beds or borders. The dwarf-growing crimson and scarlet strains of about 1 foot in height may be obtained remarkably true in character, and if used for forming marginal lines, associated with other plants, are of great value.

Orange King, Carmine Pink, and Aurora, of the intermediate type, are colours of great

excellence, while amongst the taller kinds Coral Red, Golden Chamois, Crimson and Gold, growing 3 feet high, produce an effect of colouring not easily surpassed.

The improvement seen in Aquilegias needs scarcely to be noted, as most gardeners grow these enchanting border plants. Each season the strains of Dianthus seem to surpass those of the previous year. Some are pure white, others salmon-coloured, and others rich crimson, many are beautifully laced and striped in the most fascinating manner.

New varieties of Asters seem to appear year by year in great numbers, and since the time when, as a boy, I served part of my apprenticeship in a seed warehouse, the numbers have become legion. The Comet section can now be obtained in more than a dozen distinct colours, and the same may be said of the Victoria type. The dwarf-bedding varieties are admirably adapted for the purpose where definite lines of colour are required. For indoor decorative purposes, the sinensis type, of blue, rose, and white shades, are both light and elegant.

The true Himalayan Aster diplostaphioides is a hardy perennial of much beauty, that may easily be raised from seed. The plants grow 18 inches in height, and the flowers measure from 2 to 3 inches in diameter, having pretty lavender ray petals with a centre of golden bronze.

The first year of its introduction I raised a nice batch of seedlings of Astilbe Davidii; some of the plants are now firmly established by the water's bank, and they form an attractive feature when in flower.

The brilliant Gentian-blue flowers of Anchusa italica, Dropmore variety, are easily raised from a sowing of seed, but various types of flowers must be expected; however, all are interesting and useful.

The indispensable fibrous-rooted Begonias increase in popularity, perhaps because they are consistently good in wet or dry weather; Crimson Gem, Coral Pink, and Fairy Queen are beautiful acquisitions, while Rosa Bonheur and Wurtembergia stand in the front rank. The double and single tuberous-rooted Begonias are dependable where distinct colours are required. Cheiranthus kewensis, the new winter flowering Wallflower (raised as a hybrid from C. mutabilis and C. cheiri), is noteworthy. Plants may be raised from seeds sown in July, which will flower in the open garden from November onwards.

On light, rich, sandy soil the new dwarf-growing hybrid Calceolarias form an acquisition of beautiful colourings altogether new amongst the bedding varieties.

The continued improvement effected in Marguerite Carnations, whose flowers are beautiful and sweet-scented, has increased their value for use in a cut state for decorative purposes. Clarkias are not always satisfactory, but a new type known as "Carnation Flaked" makes a beautiful pot plant and is also suitable for the border.

Blue flowers in the open garden are seldom too numerous, and, therefore, the valuable additions amongst annuals of "Queen of the Blues" and Dwarf Porcelain Blue Delphinium are noteworthy. If seeds are sown early, there is no trouble in getting the plants to flower in the first season; they are

well adapted for pot-culture and also for the use of the flowers in a cut state. Their height seldom exceeds 18 inches even in good ground. Eschscholtzia "Ruby King" is a beautiful variety of this exceedingly floriferous plant.

The fine hybrid Gaillardias are now procurable from seed, and if the seeds are sown early the plants will flower in the same year. The blooms are immense in size, and exhibit many beautiful and brilliant shades of colour. The introduction of Gladiolus præcox, which is capable of blooming the first year from seed, would appear to foreshadow the development of a new and easily-raised type, possessing great variety of colouring and marking.

I was somewhat disappointed in not securing Gilia coronopifolia to flower as an annual, and I think that only the weather conditions are to blame; this bright perennial is evidently a great acquisition to the flower garden. Godetia Schaminii fl. pl. is very distinct and beautiful, being far away the best of its class; the individual flowers are 2 to 3 inches in diameter, perfectly double, of a lovely blush rose colour, and as a pot plant it is a decided success. Impatiens Holstii is very accommodating, for it lends its beauty equally as a pot-grown specimen or planted out in a bed. If cultivated in a warm greenhouse, it will bloom satisfactorily in winter. Hybrid Impatiens are obtainable in various colours, including brilliant carmine, orange scarlet, chamois, rosy white, &c.

The introduction of the beautiful species of Meconopsis has given us some excellent flowering plants that, with care, may easily be raised from seeds. M. integrifolia forms a rosette of glaucous hairy foliage, from the midst of which rises a bold stem carrying five to nine large globular-shaped lemon-yellow-coloured flowers. M. Wallichii has gracefully-drooping blue flowers, and M. aculeata, from Kashmir, has flowers of a beautiful shade of blue with golden anthers and blue filaments; this plant is rare but very beautiful.

The new perennial hybrid Lobelias do not commend themselves to me as improvements on older varieties; certainly great variety of colour has been obtained, but many of the flowers are so dull in tint as to be comparatively worthless. The new hybrid Nicotianas are wonderfully decorative in the flower-beds and borders during summer and autumn, and being crossed with N. affinis they have just the quality N. Sanderiana lacked, namely, that of perfume. Many handsome strains of Pan-sies are obtainable capable of satisfying the most exacting and fastidious tastes. On land suitable to their well-doing, the newest types of Nemesis, of the "compact hybrid" section, make the flower borders appear almost a blaze of colour, and the taller varieties, which grow 15 inches high, are excellent. The new Nigella known as "Miss Jekyll" is a distinct gain on the old variety and forms large bushes of long-stemmed, beautiful clear cornflower-blue flowers. Among Petunias the Ophir and Lord Courtenay are beautiful varieties, while the grandiflora strains appear to advance in size and beauty every year.

I hardly know of any greater acquisition

that has been made to the flower garden than some of the *Salvias*. Only a season or two ago we cultivated *S. splendens grandiflora* for bedding purposes; the new dwarf Scarlet Zurich was the next innovation, but last season Fireball was certainly an advance upon it, both in habit, colour, and length of flower spike, and I shall be much surprised if this variety is ever surpassed.

I cannot pass *Senecio clivorum* and *S. tanguticus* without recommending them for planting in bold masses on the grass or beside the water; the flowers are an effective shade of old gold colour and last a considerable time in flower.

The new white Wallflower is an acquisition, as an associate amongst other colours, especially the dark varieties; the plants are dwarf and compact, but not quite so hardy as others. *W. H. Clarke, Aston Rowant Gardens, Oxon.*

NEW DECEMBER PEAR.

THE new Pear illustrated at fig. 182 was shown by Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, at the meeting of the Royal Horticultural Society on December 12, and its good quality as a winter dessert fruit was recognised by the Fruit and Vegetable Committee's Award of Merit.

Pear Beurré de Naghan may be described as

HULL PUBLIC PARKS.

(Concluded from page 437.)

THE EAST PARK.

THIS is the largest of the Hull parks, its total area being more than 70 acres. The ground was purchased and laid out in 1887, the necessary expenditure being provided out of the city's rates. The site embraces a wide expanse of grass, with belts of trees protecting its somewhat open position. Avenues of Limes and *Ulmus Wheatleyi* are fast becoming a prominent feature, and there are also many fine trees of Hollies, Acacias, Maples, and Sycamore are planted along an avenue which encircles the park, some pretty scenery being obtained from this drive. The area devoted to water is large.

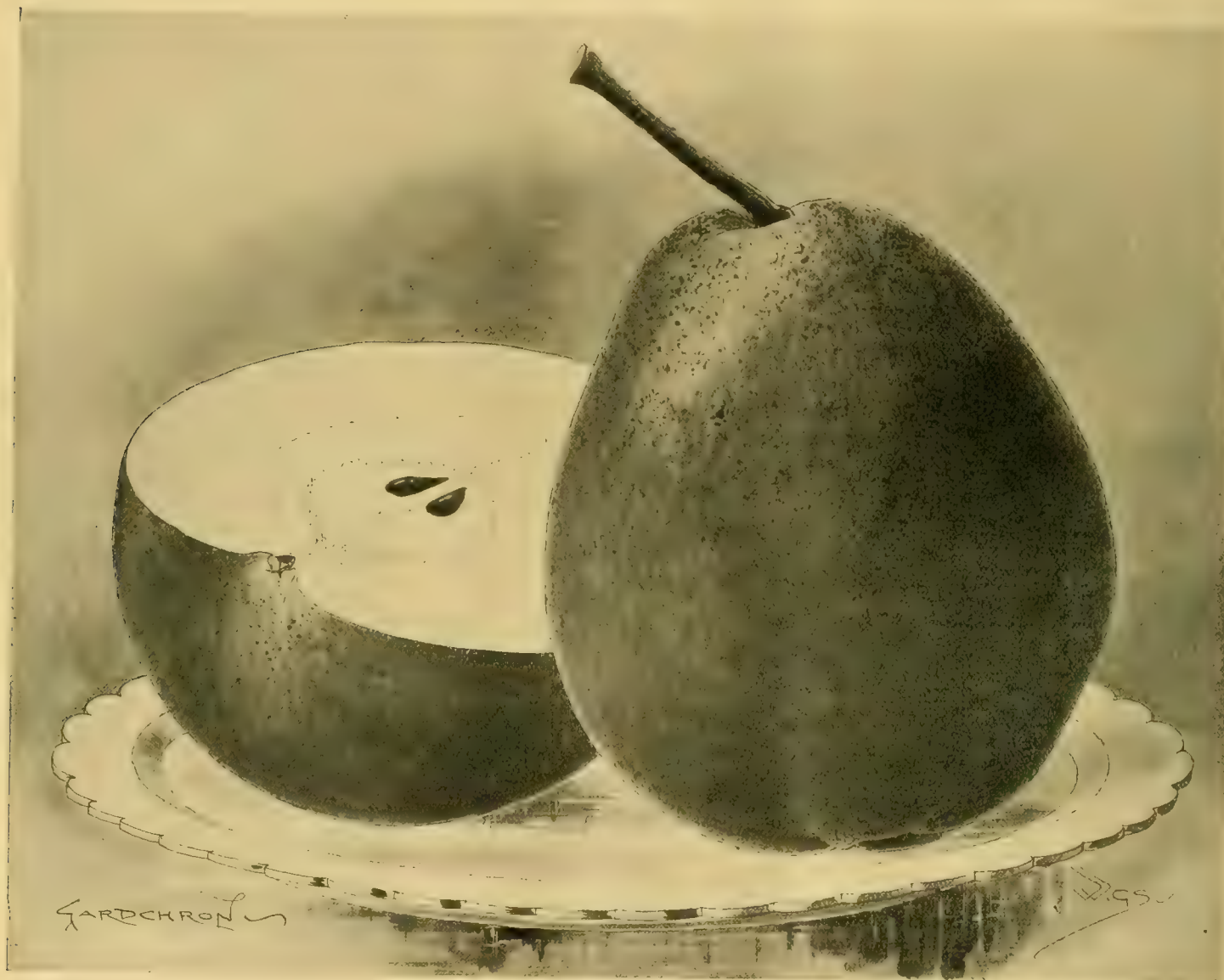


FIG. 182.—PEAR BEURRÉ DE NAGHAN, WHICH RECENTLY GAINED THE ROYAL HORTICULTURAL SOCIETY'S AWARD OF MERIT.

Of Stocks, the newer introductions include colour-improvements under each section. Princess Alice is still a white variety of the best habit, Excelsior is another white of giant size with flower spikes 2 feet long, the pale pink Beauty of Nice, and the charming Primrose-colour Princess May are each good. Empress Elizabeth, a very handsome intermediate Stock, should be grown by all; the carmine pink flowers are produced in abundance, and the plant is equally useful for pot culture or cultivation out of doors. The mammoth varieties of *Verbena hybrida* produce flowers and trusses of large size and embrace shades and colourings of many hues.

above medium size, the largest fruits being one half-pound in weight. The skin is yellowish-green, but more or less covered with minute blackish spots which may be seen distinctly in Mr. Worthington Smith's sketch now reproduced. On one side the fruits develop more yellow colouring. The stalk is set obliquely, and measures about $1\frac{1}{2}$ inch in length. The eye appears to partially open, and is set in an unusually deep and irregularly-formed cavity, marked by several slight channels. The flesh is white, melting, and has an agreeable flavour, being slightly aromatic. The fruit is very juicy and free from grittiness. This variety will be an addition to the dessert Pears ripening at or about the Christmas season.

There are two rustic bridges spanning the lake, and in this spot is a design in rockwork constructed to imitate the Khyber Pass. The area around is planted with Cotoneasters, which ramify over the artificial rockwork, *Hedera dentata*, Golden Tree Ivies, *Thuya Lobbii*, and Hollies of the Hodgkins type, with here and there a specimen of *Laurus nobilis*, *Pinus Cembra*, *Ilex ferox*, Silver Birch, *Fraxinus aucubæfolia*, &c.

From the elevated bridge over this pass a woodland walk leads to a new rock or valley garden, which was formed some three or four years ago. This spot is intersected with winding paths, the ground on each side being elevated so as to afford a better view of the large

number of Alpine and perennial plants. Many of these plants are labelled with their common as well as their botanical names, and their natural order is indicated. The naming of the plants affords an additional interest to visitors, and is of considerable value to students. Occasionally specimens are supplied for use in the teaching of object-lessons at the council's schools. Each year addition is made to the number of species of Alpine and other plants, and this garden will be of greater interest in the future. There are many choice flowering shrubs planted in groups along the higher banks, and the members include *Spiræas*, *Deutzias*, *Diervillas*, *Berberis*, &c. Two of the principal paths in this part of the park are carried over stone bridges, provided with rustic handrails. From these, views of the flowering plants are obtained, and when the banks are clothed with flowers they are objects of great beauty.

The quarter devoted to flower-beds is not large. The massed system of bedding is the

tories, and bulbous plants in pots are similarly employed. In addition to furnishing these conservatories, the work of supplying any floral decoration in connection with civic functions falls upon the park authorities. On a recent occasion the Town Hall was decorated with some three or four van loads of flowers, in addition to Palms and other foliage plants.

The Parks Committee allow cricket, football, lawn tennis, and bowls to be played in certain parts of the parks. No charge is made, except for the bowling greens, and so great a demand exists for these playing grounds that greater provision for them is contemplated on land adjoining a proposed cemetery. The committee have recently purchased some 70 acres of land part of which it is proposed to immediately devote to allotments and a recreation ground. A short time since the Corporation laid out several acres of ground as allotments, and the applications for these were so numerous that further land is to be devoted to them.

ful walk. The principal avenue is known as Westbourne, and beneath the trees on either side is a grassy sward about 20 feet wide. Of late years every new main road is made about 90 feet wide, and planted with four rows of trees, one on each footpath, and a double row in the centre, through which the electric cars run, the vehicular traffic being on either side. The first road of this type, planted about five years ago, is now assuming a nice effect, and will some day be a fine boulevard of about half a mile in length. A new road leading to Hessle is now being similarly planned, and the first portion will shortly be planted. Already some 6,000 to 7,000 trees are planted in Hull streets, and all are maintained in order by the Corporation.

The Sanatorium grounds are extensive. The intervening land between the separate blocks of buildings is either in shrubberies or as lawns with flower beds. A large area of land is set apart for the culture of vegetables and fruits for the use of the inmates of the institution.

At Sutton, a few miles from Hull, is situated the Evan Fraser Hospital. The ground of this hospital comprises about 27 acres of land, part of which is laid out as a pleasure garden.

The Crematorium at Hull was the first municipal one established in this country. Its grounds embrace some 4 acres of land, which is suitably laid out with walks and shrubberies. The Columbarium is a beautiful rocky glen, in which are deposited the cremated remains. It is constructed of artificial rockwork; the material of which it is made can be cut easily, so that the urns containing the ashes are placed in niches cut in the solid rock face, and afterwards cemented in. The whole of this Columbarium covers about an acre, and is planted with Alpine and perennial plants, shrubs, &c. At one extreme end is a wild dell, where *Penzance Briers*, *Rambler Roses*, &c., roam at will.

Mr. H. B. Witty is the superintendent of the city public gardens and parks, and his management of them is worthy of all commendation.

TROPICAL FRUITS.

DURING the Christmas season there may usually be seen in the Covent Garden market a good and interesting display of exotic fruits, the number of kinds represented there appearing to increase each year. Some of the species are delicious in the extreme, but others do not so fully commend themselves to the palate of consumers in this country, a circumstance that may be attributed in a large measure to the difference in climate. A fruit that is juicy and may appear luscious when consumed in the conditions prevalent under a tropical sun may be expected to lose much of its attractiveness if partaken of in this country in December. The species shown in the fig. 183, which has been kindly sent in by the Government agrostologist and botanist in the Transvaal Colony, have for the most part met with appreciation in this country, for they include Bananas, Lemons, Pineapples, Peaches, Oranges, with Apples, Pears, &c.

The scene is one in the Transvaal Government Tobacco Estate, situated at Tzaneen, where the fruits have been cultivated and are loaded into a conveyance for removal.

FURZE.—Flowers are so scarce out of doors at the present season that one wonders at the comparative neglect of this beautiful plant, one of our few native evergreens. It must indeed be a hard winter when a Furze bush does not bear a good crop of blossoms. As a winter-blooming shrub the Furze is often neglected, but in most gardens there are places where a plant or a group of this shrub might well be planted. The poorer the soil the better the Furze blooms, and no bank seems to be too dry for its requirements. As it is impatient of disturbance, it must be planted when young. Most nurserymen can furnish small bushes in pots of the double-flowered variety, as well as of the Irish Furze (*Ulex europæus strictus*) and the dwarf *U. nanus*. A. C. B.



FIG. 183.—EXOTIC FRUITS IN THE GOVERNMENT TOBACCO ESTATE, TRANSVAAL COLONY.

style principally adopted, but some are planted in the more formal decorative style. Annuals are largely employed, whilst *Violas*, as in all the Hull parks, are planted very extensively.

The whole of the flower beds in the Hull parks are planted in the autumn with spring-flowering plants, including *Wallflowers*, *Aubrietias*, *Forget-me-nots*, *Primroses*, *Polyanthuses*, *Violas*, *Erysimum*, *Daisies*, &c. The double-flowering *Arabis* is freely used as a groundwork to many of the beds planted with *Tulips*. Many thousands of bulbs are planted in all the public gardens and parks of Hull.

This park, similar to those already described, contains a conservatory, but it is not so large as those in the other parks. This house is decorated throughout the year with seasonable greenhouse flowering plants, with *Palms*, *Ferns*, *Dracænas*, &c. A special house has recently been built for the display of *Chrysanthemums* in the autumn.

In the spring time large stocks of *Lilac*, *Deutzia*, *Staphylea*, *Azalea*, and *Roses* are forced into flower for the decoration of these conserva-

PUBLIC CEMETERIES, HOSPITALS, &c.

The work of maintaining the grounds of the various public institutions is conducted by the park authorities. Of the cemeteries, the Western has an area of about 32 acres, and the Eastern 19 acres. Avenues of trees are planted in the Western cemetery, many of the trees being ornamental *Thorns* (*Cratægus*). There are also many *Maples*, broad-leaved *Oaks*, *Elms*, *Chesnuts*, *Limes*, *Pyrus*, &c., that add beauty to the roads. An extensive collection of *Hollies* are planted in this burial ground. In each cemetery flower gardening is extensively carried out, there being about 100 flower beds in each. The disused burial grounds of Hull number 12, and these are maintained in order by the Corporation. Two of these are extensively used by the public. They are planted with flowers, and are provided with seats; they form useful places of rest and retreat in the centre of the town.

The trees in the streets of Hull are a great feature of the city. Five of the principal avenues are about half a mile in length, and during the summer time they afford a delight-

The Week's Work.

PLANTS UNDER GLASS.

By J. G. WESTON, Gardener to H. J. KING, Esq.,
Eastwell Park, Kent.

Plants in frames.—At every opportunity when the weather is favourable plants in frames should be examined, and any necessary water afforded them. Watering should be done with



care, as many of the plants are comparatively inactive at the roots in mid-winter, and need very little water. Plants in a more active condition of growth, including herbaceous Calceolarias, Cinerarias, Humeas, and Marguerites, should be allowed as much room as is possible

between the pots, and be watered whenever necessary, for they must not be allowed to get dry at their roots.

Violets planted in frames should have all decaying foliage removed, and the soil should be stirred occasionally, especially if it has a tendency to become caked and sour. Watering should be done on mild, open days, for then extra ventilation may be given without fear of injuring the plants. Fresh air should be admitted to the frames whenever possible, for Violets never succeed in a close atmosphere. Violets in pots should be moved to a cool, well-ventilated house, and be placed on a shelf near to the glass.

The forcing-house.—Continue to place in heat successional plants of Lilacs, Azaleas, Deutzias, Spiræas, Prunus triloba, &c., taking care not to subject them to excessive heat at the commencement of forcing. These plants are more easily forced as the season gets later, therefore it is not advisable to place too many in heat now. If space is limited, an early Peach-house or a vinery in which heat is provided is suitable for commencing the forcing of these flowering shrubs.

Chrysanthemum cuttings.—The stock plants for providing cuttings should be placed in a light frame or glasshouse to ensure sturdy growths. Cuttings of many varieties should now be inserted, and the insertion of others should be effected whenever the cuttings are in a suitable condition. A suitable place for rooting the shoots is a small frame placed on the staging of a cool house. The work can then be executed at any time and in all weathers, whereas cuttings placed in frames in the open may suffer from neglect during severe weather. The cuttings should be inserted in a light, sandy compost in small pots. A suitable mixture of soil consists of two parts leaf-soil and one part fine loam, with a plentiful addition of sharp sand. The soil should be made moderately firm in the pots, and the cuttings be inserted with the least possible delay after being severed from the old plant—a wilted cutting loses much of its vitality. After being watered, they should be placed in the frame which should be kept closed during the day. Ventilate a little at the end of the day, and if much moisture accumulates remove the lights for a short time. When the roots are formed, ventilation should be given daily, and in a few days the plants may be taken from the frame and be placed in a plant-house in a position that is exposed to sunlight.

THE KITCHEN GARDEN.

By WILLIAM H. HONESS, Gardener to C. COMBE, Esq.,
Cobham Park, Surrey.

Winter vegetables.—Owing to the weather during the latter part of the season having been so mild, winter vegetables at the present time are in excellent condition, and the late salads are lasting out well. The chief work that will de-

mand continued attention in the near future will be the forcing of salads and vegetables with the object of securing as great a variety for the table as is possible. Materials for hotbeds



should now be prepared by thoroughly well mixing them together. They will be needed for such crops as Carrots, Turnips, and Radishes. Radishes might also be sown between rows of Potatoes where these are planted in heated frames. Sticks required for Peas and Runner Beans should be examined, and provision made for obtaining fresh ones. It will be much better to have these cut during the winter season, as they will then last much longer than if left until the sap begins to rise. They may be sorted into sizes and pointed ready for use when they are required. Labels should also be collected, cleaned and painted. The prevalence of wet weather also affords an opportunity to examine all the roots in the store-house, this being necessary owing to such causes as damp from drip, injury by rats, &c., which are often very troublesome at this season.

Tomatoes.—Young plants will require potting, if they have not already been given this attention. The compost should consist of fine loam, with a good proportion of manure obtained from a spent Mushroom bed. Keep the roots of the young plants well on the dry side till the leaves show signs of flagging, when they should receive a good soaking of water, after which the roots will soon become active and the plants require another shift.

Cauliflowers.—Late plants of the variety Autumn Giant, also plants of Snow's Winter White, will now be furnishing useful curds, but if left out in the open may be injured either by frosts, excessive wet, or snow. If these are lifted and stored in a shed or similar place they will last in good condition for a much longer period.

Broccoli.—Such varieties as Autumn Mammoth, &c., will in some instances be on the point of "turning-in," and will require protection.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to LORD CLINTON, Bicton,
East Devon.

The Grape vine.—The best season for the pruning of the vine is the end of the summer, as soon as the leaves have dropped. If the vines are trained on the spur system all the lateral growths should be cut to two buds, but if the



extension system is practised, shorten the leading shoots to about 3½ feet. The rods should be trained 18 inches apart, and when a cane becomes exhausted it should be entirely removed and a young shoot trained in its place. Wash the bark of the shoots with a little soft soap and sulphur. Remove the old litter from the border and apply a top-dressing, either of soot, wood-ashes, or lime, which should be pointed in with a fork.

Loganberries, &c.—If the old canes were cut away at the end of the fruiting season, there remains little to be done beyond a re-arrangement of the current year's growths, and their shortening back to a prominent bud. Blackberries and the Wineberry should be afforded the same treatment as the Loganberry. If not already applied, afford a good mulch of strong manure, as all these brambles are gross feeders. These plants are suitable for training on arches, pergolas, or depending chains, and in this connection the Loganberry is the best plant. Planting may still be undertaken in suitable weather.

A review of the season.—Late spring frosts, cold, cutting winds, and an absence of sunshine in summer, all had a share in frustrating the early hopes of a good fruit harvest, especially the Apple, which was by far the worst crop of the season. Other crops were generally satisfactory. Although there were frequent wet days during the warmer months of the year, the rainfall was not heavy in the west, but the rains of the past 10 weeks have made good the deficiency. The wet weather has delayed the planting of fruit trees and bushes, especially on heavy land. Although the season has been comparatively cold and sunless, compared with that of last year, fruit trees in general promise a good show of blossom buds; the month of September being exceptionally bright and dry favoured the ripening of the wood.

THE FLOWER GARDEN.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow,
Cornwall.

Pruning shrubs, &c.—Although the present time is not the best suited for pruning, yet in gardens where there are many hedge and other plants that require pruning, much of the trimming must perforce be done during the winter, and unless hard frosts occur immediately after the ordinary pruning of hedges and the commoner shrubs, no harm accrues. In the case of Laurel, the shoots are pruned much easier



now than later on, when they materially toughen. The shrubs which require a severe pruning must be left until the spring, as there is a great danger of killing even the hardiest species if they are cut hard back in the winter. The pruning of winter and

spring-flowering shrubs must be left until they have made their display of flowers. If possible, it is a saving of labour to burn the prunings on the spot in a smother-fire, taking care that the wind is blowing away from the residence before starting the fire. A fire of slow combustion yields the greatest quantity of valuable wood ashes.

Euonymus europæus should be planted more often, especially in shrubberies and along the margins of woods for winter effect. When the leaves fall, a quantity of scarlet fruits with orange-coloured axils are exposed to view. These fruits hang after the birds have cleared the berries from the Holly and Cotoneaster frigidula. The Spindle-tree delights in partial shade, and no soil seems too poor for it to grow in. The best-fruited example I have seen was growing on a heap of rubble in a stone quarry.

Frames containing cuttings.—Although they are fairly hardy, the cuttings of such plants as Antirrhinums, Calceolarias, Pentstemons, and Phloxes in frames must now be protected by placing bracken, stable litter, or leaves around the frames. Continue to open the lights for ventilation whenever possible, in order to obtain sturdy plants, but cover the glass at night-time with a mat or other protection whenever more than 3 or 4 degrees of frost is imminent.

PUBLIC PARKS AND GARDENS.

By W. W. PELLEROW, Superintendent of the Parks and Open Spaces in the City of Cardiff.

The head of parks departments.—The question as to the profession of the chief official of a public parks department is one of the utmost importance to all park superintendents, and one which has a very material bearing upon the ultimate success in the administration of such parks.

Notwithstanding the fact that many of the duties of the head of a parks department are entirely outside the sphere of actual gardening,

yet for the proper discharge of the most important part of his office it is essential that he should be a practical horticulturist. Unfortunately in several of our cities and large towns there is no practical man at the head of the parks, nor are the parks even managed by a special department, but are controlled by the committee which has charge of the streets and highways, a condition of things not often to the advantage of the parks.

One can readily understand that in a small town where there may be but one or two open spaces, it would hardly be necessary to have a special department charged with their management. In large towns, however, where there are a number of parks and a large staff of men employed on park work, the case is different, and one naturally expects their administration to be entrusted to a special department, the chief official of which is a trained gardener and not, as is sometimes the case, an engineer or solicitor.

Let it be distinctly understood that the objection to engineers or solicitors being the heads of parks departments is not one of professional jealousy, nor yet the desire to create more lucrative posts for gardeners, but simply on the common-sense ground, that their holding positions for which they have never received the slightest practical training cannot tend to the best interests of ratepayers or of public gardening.

In the same way that a medical man is the proper person to have charge of the medical officer of health's department, and a civil engineer of the surveying department, a trained gardener who thoroughly understands his work is undoubtedly the right person to be chief of that department which is responsible for the management of a town's public parks and gardens.

In those towns where a practical gardener is at the head of park affairs, it is generally found that gardening work is much better carried out than where an official of another profession is the responsible chief. Where the gardener has the sway, natural beauties are usually made the most of; trees, shrubs, and flowering plants are seen both in greater variety and profusion, and formalities so characteristic of the engineer's work in the park are reduced to a minimum.

A surveyor who is at present responsible to a certain Council in the West for all the horticultural work it carries out confessed to me the other day that he could never see any great advantage in planting different varieties of trees about a town. To him a tree was merely a green-leaf-bearing object and nothing more, one kind of which was equally as good as another! Hence he invariably planted the same kind of tree, as it was cheap and easily obtained. Judging by the lack of variety met with among street trees in many towns, this gentleman is apparently not the only member of his profession who holds these views.

Gardeners should endeavour in every legitimate way to induce public bodies to recognise the principle that properly qualified horticulturists are the right persons to be the head of a park department. As a means of materially assisting in this direction, park superintendents should organise themselves in a similar manner

to those in America, when they would be in a better position to lay their views upon this and other questions before public bodies than they are at the present moment.

After all, however, the one great essential in bringing about the proper recognition of gardeners in this matter lies in their being fully qualified to carry on the duties required of them. Hence it behoves all young gardeners who are desirous of going into public service to do everything in their power to fit themselves for the entire management of a public parks department.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

The Mexican house.—*Laelia anceps* and its numerous varieties are now opening their flowers. When the plants have done blooming they should receive much less water at the root than hitherto, but the pseudo-bulbs must be kept in a fairly plump condition, and while at rest the atmospheric temperature of the house at night may be kept at from 50° to 55°. The pretty *L. rubescens* *laciniosa* is also in bloom.

There are two distinct varieties, one having nearly white flowers and the other flushed with rose, both having a dark maroon spot at the base of the lip. It is a Mexican species, and may be grown with the *L. anceps*. These *Laelias* should be re-potted when they commence to show new roots from the base of the current



season's growth. The rare *Oncidium Cavendishianum* also thrives well in this house, and now the plant is sending up its strong flower-spikes it should be placed in the lightest position available. If the compost is kept too damp, the large, thick, leathery leaves will decay at their base and fall off. After the plant has flowered they will require a good rest, therefore partially withhold water until growth recommences. The well-known *Peristeria* *clavata* or Dove Orchid, having completed its large pseudo-bulbs, will also require a long rest, and the dry atmosphere of the Mexican house is the best place for it. Keep the plant well on the dry side until it begins to grow again. The less-known *P. Lindenii* requires the same treatment.

Re-potting in winter.—During the winter months it is not advisable to disturb many Orchids by re-potting, &c., but in a large and miscellaneous collection, such as we have at Burford, there are some species which will require such attention. At the present time there are the *Maxillarias*, which not only require potting, but will bear the operation better now than at any other period. Such handsome and strong-growing kinds as *M. venusta* and *M. grandiflora*, that have recently flowered, should be examined, and, if necessary, be re-potted, so also may such varieties as *M. longiloba*, *M. fucata*, *M. fraxiflora*, *M. phyllanthiflora*, *M. Mooreana*, *M. macrantha*, *M. luteo-alba*, *M. Lindenii*, *M. Holburnii*, *M. elegantula*, *M. chloroleuca*, *M. calceolaria*, *M. parviflora*, *M. rubra*, *M. humilis*, *M. prostrata*, *M. pycnantha*, *M. curviflora*, &c. These *Maxillarias* grow thoroughly well in a compost of Peat, sphagnum fibre and Osmunda fibre in equal parts, keeping the fibre moderately fine, and mixing plenty of small pebbles with it. Do not use any sphagnum-moss. Pot each plant with moderate firmness, pressing the entire ball of roots pressed together with equal compactness as at the sides of the pot, that part of the compost which is not firm will quickly become saturated, and may cause considerable injury to the plant. The handsome *M. spectabilis* should be grown in a shallow teak-wood basket. As these *Maxil-*

laris require liberal root-waterings during the season of growth, it is important that the receptacles should be thoroughly well drained. The coolest part of the intermediate house is the best place for them.

Cochlidium—*C. Noctuidiana*, *C. vulcanicum*, *C. sanguineum*, and *C. striatum* like plenty of water at all seasons, and three or four when hung well up to the roof glass, and by the side of them should be suspended such dwarf-growing *Oncidoglossums* as *O. Rolan*, *O. Oerlethi* (both species being now in bloom), *O. Cervantez*, *O. apertum*, *O. Humeanum*, &c.

FRUITS UNDER GLASS.

By ALEXANDER KIRK, Gardener to J. THOMSON, Esq., Norwood, Abber, Clackmannanshire.

Vineries.—The bunches of Grapes that are still hanging of such varieties as Lady Downes and Lady Hutt should be examined carefully three times each week for the purpose of removing decayed berries. Vineries in which Grapes are hanging should be kept as dry and as cool as possible, and all fallen leaves should be at once removed. On dull and wet days provide a little heat from the hot-water pipes.

When ever possible, allow a small amount of ventilation by the top apertures during the night time. In the case of severe frosts the houses must be completely closed and artificial heat be provided. When fire heat is applied in houses that are entirely closed there is always danger of steam and moisture filling the house



which is detrimental to the long-keeping of ripe Grapes. This is obviated if the top ventilation is allowed to remain open at the time when the frost abates, and all the Grapes have been cut out and must be entirely cleared of their fruit. When ever possible, allow 18 or 20 inches of stem when cutting the bunch. This will allow 12 or 15 inches of stem below the bunch and 6 inches above. Have ready sufficient bottles filled with fresh water, and insert the longest end of the shoot in the water. If a piece of charcoal is placed in the bottles it will assist in keeping the water pure.

All vines that have not their leaves should be pruned, as advised in a previous calendar, one month or more before they are to be started into growth. The house should be kept as cool as possible, but without admitting frost. This rest will be valuable to the plants, and they will start freely into growth when the period for forcing arrives.

Young vines should now be pruned. Cut the weaker rods down to within 3 feet of the ground. Stronger ones should not be cut so hard, and the stoutest may even be allowed 6 feet of growth that will carry two bunches of Grapes the next year. Pruning them will cause them to make a more moderate growth; grow in moderate to fine culture. Wash the house well with hot water and scrubbing brush. Dress the vines twice with Gishurst Compound according to the directions given with the use of it. If red spider has been troublesome the house should be washed and the vines be liberally sprayed with the Gishurst Compound. Remove the old soil from the bottom of the house, and replace it with a new one. The soil should be made up of peat, sphagnum fibre and Osmunda fibre in equal parts, keeping the fibre moderately fine, and mixing plenty of small pebbles with it. Do not use any sphagnum-moss. Pot each plant with moderate firmness, pressing the entire ball of roots pressed together with equal compactness as at the sides of the pot, that part of the compost which is not firm will quickly become saturated, and may cause considerable injury to the plant. The handsome *M. spectabilis* should be grown in a shallow teak-wood basket. As these *Maxil-*

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, DECEMBER 31—
Roy. Hort. Soc. Coms. meet. Brit. Gard. Assoc. Ex. Council meet.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—
Sale of Dutch Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.
Hardy Border and Herbaceous Plants and Bulbs, at 11; Roses and Fruit Trees, at 1.30; Azaleas, Palms, &c., at 6; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.
FRIDAY—
Herbaceous Plants and Bulbs, Roses, Azaleas, &c., at 11; Orchids in variety at 12.45; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—38.4°.

Events of the Year.

Our present issue will close the records for another year, and, therefore, the opportunity is afforded for reflecting upon the events that have characterised it, with the view of taking stock, so to speak, of the present position. It is not, however, an easy matter to estimate at their correct value circumstances that will have to come under consideration. A wider perspective would be needed to enable us definitely to decide the relative importance that they will eventually have in horticultural history, and even in selecting a few subjects for special mention from the events of the year, we may not always succeed in choosing those which will have the greatest or most permanent influence on the science and art of gardening.

The first subject that may be mentioned carries our minds back to the memorable conference on hybridisation and plant-breeding that was held under the auspices of the Royal Horticultural Society in 1906, and to which reference was made in our review in December last. The conference was held in July, but so exhaustive were the papers read at that gathering, and so technical were they in detail, that the Report of the proceedings could not be published until the spring of the present year. This Report constituted a volume containing 486 pages and was freely illustrated. It contains information upon the latest experiments that have been conducted in connection with heredity and hybridisation, as well as a discussion on the allied subject of variation in plants, whether by sudden mutations or the mixing in one individual of the characteristics previously found in several species. This volume will continue to form a standard work of reference on the subject of Genetics until the holding of the next international conference, which is expected to take place in Paris in the course of a few years. The thanks of gardeners and botanists alike are due to the Royal Horticultural Society for the work and expense entailed by the conference, and especially are they due to Professor

Bateson, who presided over the extremely technical debates, as well as to the Rev. W. Wilks, who edited the Report of the Proceedings.

The Society has also instituted a research laboratory in the gardens at Wisley, and we regard this step as one of the most important events of the year. The formal opening of the laboratory in July was attended by a distinguished company of scientific men, over whom Lord Avebury presided. The minds of gardeners generally went forth to that gathering in the hope that careful and exhaustive experiments will in future be conducted on a strictly scientific basis at Wisley, and that by these means many problems connected with gardening practices will be solved. Fears have been expressed that Wisley may become a mere school of gardening for young students and that the work involved in teaching the students will in a measure prevent the scientific director from undertaking original research. We do not share these fears, because we believe that the Council knows perfectly well that the Fellows expect the Wisley laboratory to be used principally for increasing the general knowledge, and to serve only in the second degree for teaching purposes. It has been already suggested in these columns that the inoculation of seeds and soil with bacteria obtained from the nodules found on the roots of leguminous and other plants, as related in our three previous numbers by Professor Bottomley, is a subject that might be usefully submitted to experiments at Wisley. The demand for nitrogenous plant food over the world's surface is so large that, if means can be found by which more use may be made of the nitrogen contained in the atmosphere than is possible at the present time, the result will be of first-rate importance.

The centenary of the birth of Linnæus afforded a fitting opportunity to do honour to the memory of this great Swedish botanist. There was a large gathering of eminent men at Upsala, and this was attended by a deputation from the Linnean Society of London, and by other English botanists, the English delegates being more numerous than those of any other country. During the proceedings in Sweden and on the occasion of the celebration of the Royal Swedish Academy of Sciences on May 25, Count K. A. H. Mörner announced that the newly-struck Linnean Medal of the Academy would be presented to Sir Joseph Dalton Hooker as an acknowledgment of his valuable labours in botanical science, and the presentation was made subsequently. Further Linnean demonstrations took place in other countries, and the Linnean Society of London held a reception and soiree on June 7, when an exhibition was made of objects associated with or belonging to Linnæus. It will be remembered that Sir Joseph Hooker shortly afterwards attained his ninetieth birthday, and on that occasion received from H.M. the King the appointment to the Order of Merit. Whilst writing of Linnæus, who first established the system of binominal nomenclature, mention may be made of the rules and regulations adopted by the great Congress of Botanists held at Vienna in 1905, and published at the commencement of the present year. It is as essential to the gardener as to the botanist that the naming of plants should be in accordance with sound

principles which secure uniformity in practice.

The establishment of a chair of Forestry at Cambridge University is a matter for satisfaction, and the selection of Dr. Aug. Henry for the position commanded general approval. In other centres the facilities for the teaching of the natural sciences have been increased, and only in our last issue attention was drawn to a munificent legacy for the establishment of a chair of Cryptogamic Botany at Manchester. Now that Forestry is recognised as a subject at one of the Universities we may hope to see in the future a chair of Horticulture instituted for the purpose of teaching the science of gardening.

Turning to the consideration of the weather and its effects upon crops, there has probably been even greater excuse for maligning the British climate this season than usual. In the spring, when fruit trees were blossoming, the prevalence of late frosts seriously injured the flowers, and the result was seen in a very deficient crop of Apples. Pears were nearly an average crop, but Plums were so abundant as to cause a glut in the principal markets. Small fruits were plentiful, but, owing to damp weather and little sunshine, Strawberries failed to ripen well, many of the fruits decaying during the lengthened process. There was but little real summer weather during the whole season, and the few hot, sunny days experienced at Easter have been described as the summer of 1907! The grass crops were abundant, but much difficulty was experienced in harvesting the hay in good condition, and the corn crops in some districts were still in the fields in November. Notwithstanding all this, however, garden crops of vegetables were good, and on light soil were better than usual, especially Brassicas, these requiring much moisture at their roots. The Potato crops were not so satisfactory, and the later varieties particularly suffered much damage from disease.

The information upon the subject of the summer-pruning of fruit trees supplied by our correspondents has been published in a tabular form in our columns and constitutes the first serious attempt that has been made to present a detailed summary of the methods practised in this matter by fruit cultivators generally. Although the information thus obtained showed that the practices are by no means uniform, and that many cultivators have no clear conception of the principles upon which their operations are based, nevertheless it may be fairly claimed that the information given will afford valuable material for those who may feel disposed to study the question.

The subsequent discussion at a meeting of the Scientific Committee failed to carry the matter much further, and the whole subject is one which calls for systematic and careful experiment. In the discussion that ensued in our own columns it was clear that many correspondents omitted to take notice of one of the most obvious distinctions between summer and winter-pruning. They supposed that, if pruning in winter caused the trees to break into stronger growth, by disturbing the balance between the top and the root growth, the effect of summer-pruning would be the same, neglecting to allow for the effect of the partial defoliation that summer-pruning imposes upon the tree. Just what this effect is has yet to be determined, but

some cultivators have claimed that it is equivalent to that obtained by pruning the roots.

The horticultural exhibitions have been as numerous, or more numerous, than ever. The Temple and Holland Park Shows were successful functions, and the meetings in the Royal Horticultural Hall have been well attended. It is satisfactory to note here that the parent Society, which, happily, continues to be exceedingly prosperous, has seen its way to offer more favourable conditions to the special societies who may desire to hold their exhibitions in the Vincent Square Hall, and during next year it is expected that more of the "special" shows will be held in that building than formerly.

The recent successful expansion of the National Rose Society is a most noteworthy circumstance. Those who read the report published in our last issue will have noticed that the membership has been doubled in a period of five years, and that during the present year the Society has gained 577 new members. Whilst admitting that the Rose has unequalled charms to attract new adherents, this increased prosperity may be attributed in a large measure to the fact that the Society has ceased to regard exhibitions as the sole reason for its existence, and has, consequently, so shaped its policy as to be capable of affording help to all cultivators of Roses, whether for exhibition or not. The late President, Mr. C. E. Shea, the present President, Mr. E. B. Lindsell, and the Honorary Secretary, Mr. Edward Mawley, are congratulated upon the success the Society has achieved.

The Carnation Societies, Chrysanthemum Society, Sweet Pea, Auricula, and Daffodil Societies have held their annual shows and continue to perform useful work. The Potato Society alone has ceased to exist. There is no doubt this Society rendered useful service in attempting to reduce the number of names by properly conducted trials, but the agricultural and gardening interests were not identical, and without the support of both of these sections the Society could not live.

The BRITISH GARDENERS' ASSOCIATION has increased its membership during the year, and in May last issued the first number of a quarterly *Journal* that should prove of the greatest value as affording a means for gardeners to discuss questions for which space cannot always be found in the public Press. So long as the management of the Association is conducted with a due regard for the rights of gardeners and their employers, it will continue to deserve the support of all fair-minded men, and by its aid much may be done to raise the position of the rank and file of gardeners and to increase the status of the profession itself.

The recent federation of Mutual Improvement Societies under the auspices of the Royal Horticultural Society is likely to prove helpful to these societies in the excellent work that engages their attention.

The gardening charities have continued to help the needy, and in turn have received a large measure of public support. In the field of legislation several Acts have been passed which will have effects upon horticulture. The Destructive Insects and Pests Act has given to the Board of Agriculture and Fisheries power to adopt measures for the prevention of pests and diseases, and the

Board has recently exercised its power by prohibiting the importation of Gooseberry bushes, with a view of preventing the spread of the American Gooseberry-mildew. The Weights and Measures Act is already in operation, and the Small Holdings Act will come into force on January 1. The provisions of this latter Act, in so far as they are likely to affect our readers, will form the subject of an article in our next issue. The Prevention of Corruption Act became effective on January 1 of the present year, and it is pleasant to record that during the year no offence under this Act has been alleged against a gardener. We believe that the business integrity of gardeners generally is as high or higher than that of any other calling, and this is shown to be the case.

The obituary list is an exceptionally heavy one, and it is a peculiarly sad one for ourselves. The late Dr. Masters, who edited this journal for a period of 41 years, passed away on May 31 after an illness which lasted during the whole of that month. Many of our readers knew him well, and the services he rendered to horticulture. We need not repeat the expressions of our own feelings which were published in the issue for June 8. The Council of the Royal Horticultural Society is now engaged in raising a sum of money for endowing a series of "Masters" lectures, which will bear witness to the public esteem for Dr. Masters and further the cause of horticultural education in which he was greatly interested. Among deaths which have occurred may be mentioned those of Sir Dietrich Brandis, whose excellent work on *Indian Trees* was published early in the year; Sir Michael Foster, so eminent in the scientific world and an active personality in gardening circles; Sir Thomas Hanbury, whose gift of the Wisley Gardens to the R.H.S. will be remembered with gratitude; Sir Frederick Wigan; Lord Aldenham; Rev. S. Eugenie Bourne; and Lord Battersea, all names that were familiar in gardening circles. Of nurserymen we have lost James H. Veitch, F. Q. Lane, Stephen Walker, George May, and L. Duval; of gardeners, Charles Jordan, John Wallis, J. Allsop, John Newton and others, whilst in the death of Mr. J. Assbee, Covent Garden Market has to regret the loss of its superintendent.

* * * **OUR ALMANAC.**—According to our usual practice we shall shortly issue a *Gardeners' Chronicle Almanac* for the year 1908. *In order to make it as useful as possible for reference, we shall be obliged if Secretaries of Horticultural, Botanical and Allied Societies, or any of our correspondents, will send us IMMEDIATE INTIMATION of all fixtures for the coming year.*

OUR SUPPLEMENTARY ILLUSTRATION to the present issue depicts a winter scene in one of the most remarkable tree gardens in the world. The Arnold Arboretum contains every species of tree that is capable of withstanding the severe winters of New England, and should be visited by any English horticulturists who may happen to go to America. Our readers are aware that Mr. E. H. WILSON is now engaged in collecting plants in China on behalf of the American Government, and it is certain therefore that the Arnold Arboretum will become even more famous when the new introductions from that Eastern country are brought into cultivation there under the direction of Professor C. S.

SARGENT. We do not often have a "white" Christmas in England in these days, but in the cold winter climate of Massachusetts it is the rule and not the exception.

FLOWERS IN SEASON.—From Mr. BEN. ASHTON, Lathom Gardens, Ormskirk, we have received some excellent inflorescences of *Euphorbia* (*Poinsettia*) *pulcherrima*. In sending them, Mr. ASHTON states that they were propagated in May, and have been grown throughout the summer in a cool frame, being transferred to a warm house in September. The plants range from 2 to 5 feet in height, and are furnished with foliage down to the pots, which measure 5 inches in diameter. The plants have been given liberal applications of liquid manures.

ROYAL METEOROLOGICAL SOCIETY.—At the monthly meeting of this society, held on the 18th instant, at the Institution of Civil Engineers, Dr. H. R. MILL, president, in the chair, Mr. R. STRACHAN read a paper on "Indications of Approaching Frost," in which he said that for the purpose of making forecasts the dry and wet bulb thermometers should be noted at or after sunset, or at 9 p.m., and the amount of cloud at the time, and during the fore part of the night if convenient. The dew point can be found by reference to hygrometrical tables. When the dew point is at or below 32°, frost is in evidence, but may be evanescent, due to a rise of temperature, with change of wind, rain, or overcast sky. Even when it is above 32°, if the sky is clear it is possible that the temperature on the ground will fall low enough for frost to form. Thus the evening observations should lead to a good idea of what may happen during the night.

WINTER-FLOWERING CARNATIONS.—In addition to the awards to new varieties mentioned in our report on p. 420 of the show of the WINTER-FLOWERING CARNATION SOCIETY, First-Class Certificates were awarded to two varieties exhibited by Mr. A. F. DUTTON, The Nurseries, Iver, Bucks. These were Winsor, a large flower of pink colour, and Melody, a pretty blush-tinted flower.

FARM COLONY FOR UNEMPLOYED MEN.—At a recent meeting of the Edinburgh Distress Committee, Mr. RICHARD CAIRNS, of the Public Parks Department, Edinburgh, was appointed manager of the Murieston Estate, which the Committee have purchased for the purposes of establishing a farm colony. Mr. CAIRNS has been employed in the gardens at Dalhousie Castle and Dalkeith Palace, and latterly he held the post of farm manager to Mr. MARTIN WHITE, Balruddery, near Dundee.

ELEMENTARY BOTANY.—This little book is intended for use in schools, and should serve its purpose fairly well. It is, however, by no means free from errors; thus on p. 49 the remarkable statement is made that "the embryo sac enlarges gradually, enclosing the whole of the nucellus." Of course it does nothing of the sort. Again, in speaking of the growth in length of roots on p. 66, cell division is confounded with cell growth. As it is now becoming a common feature in elementary books on botany, plant physiology is accorded a place, but the treatment is rather superficial, and the account given of absorption of water and its relation to osmosis on p. 80 is entirely misleading. The subject of osmosis seems to be commonly misapprehended by the majority of those who write this class of books, but in view of its importance it ought to be more thoroughly studied. In spite of these blemishes, however, the general method of the book is commendable, and could easily be made the basis of a good elementary course in botany.

* By M. A. Liversidge. London: Blackie & Son, Ltd., 1907.

THE CULTIVATION OF BANANAS IN COSTA RICA.—Some idea of the nature and extent of the Banana production in Costa Rica may be gathered from a recent report on the subject, from which we take the following notes. The plants grow all the year round, the shoots begin to produce at the age of nine months, and are cut down every season. The Banana bunches are measured by hands, each perfect hand containing 22 Bananas. The average number of hands on a bunch ranges from 7 to 22, and the average number of Bananas on a bunch is 144, though a few bunches have been found bearing more than 500. The land along the coast is peculiarly adapted to Banana cultivation. While the Banana plants thrive for awhile in other countries of Central America, no soil seemed rich enough to stand the continuous cultivation of the fruit save Costa Rica and Upper Panama. Fifteen bunches of fruits is the estimate yield per acre each month, and, taking the average of 144 Bananas to the bunch, it will be seen that each acre will produce 15,920 Bananas. The UNITED FRUIT CO. owns 150,000 acres of land suitable for Banana culture, the greater portion of which is

THE HEATING OF HAYSTACKS.—The spontaneous combustion of Hay when it has been stacked in a damp and green condition is one of the most singular of agricultural phenomena. Although the causes have been repeatedly investigated, it cannot even yet be said that the matter is fully explained. But the results of some recent investigations seem to prove that the process is a complex one, beginning with the effects of microbes which set up fermentation, and continuing as chemical changes that proceed after the high temperature has effectually killed the microbes that started it in the first instance. It is found, as the result of careful experiments, that when the grass is heaped up and the temperature begins to rise, there is a concomitant development within the mass of certain definite micro-organisms or microbes. Some of these belong to the class of moulds, but others are of bacterial nature. It seems probable that two of the latter are mainly responsible for the first rise in temperature, viz., *Bacillus coli* and *B. calfactor*. The first-mentioned organism flourishes at about 100° Fahr. and the second at about 140° Fahr. But when, owing to the fermenta-

with a corresponding evolution of heat, by the use of finely divided or porous substances. Or it may be that during the change which is taking place, gases are given off which, in contact with air, will readily ignite under the conditions that we are now considering. But whatever be the nature of those changes that finally lead to spontaneous combustion, it is certain that they are started by the activity of the micro-organisms already indicated. This is proved by treating the Hay in such a manner as to secure their death before they have been able to carry the heating process far enough. If this is done, the mass will no longer get hot, but it can again be induced to do so if it is "infected" with the microbes. It is easy to accomplish this by merely pouring over the heap some water in which grass or soil has been stirred, whereas no such effect is produced if boiled water be used instead of the infusion. It will be seen that the heating of Hay offers many interesting problems for solution, and one very obvious series of these is furnished when we consider the different effect of stacking the undried grass in a silo or in a rick. Although these matters perhaps belong to the domain of scientific agriculture rather than to that of horticulture, they have a wide practical bearing, and are just now attracting a considerable amount of interest.



FIG. 191.—VIEW IN PROFESSOR TREUBERG'S GARDEN, SOUTH RUSSIA.

remote from the railway, and is not yet utilised for the production of Bananas. Last year the company purchased about half the Bananas it shipped. Many growers own their own farms. During 1906 no less than 8,500,000 bunches were shipped from Port Limon, of which 5,000,000 went to the United States. About 400 ships, or, on an average, more than one ship per day, loaded with Bananas left Port Limon last year. This year it is confidently believed 10,000,000 bunches will be exported. A ship of 3,000 tons sometimes takes from 40,000 to 50,000 bunches; 32,000 bunches, or over 4,600,000 Bananas, are about an average load. When it is stated that the UNITED FRUIT CO. has 102 ships occupied in carrying fruit to the United States and Europe, some idea may be gained of the tremendous growth of the business. Many of the ships ply between Cuba, Jamaica, and other fruit-producing countries, and the ports of the United States, as well as of England. Although Jamaica Bananas are considered by epicures of better quality, the Costa Rica or Limon fruits sell better in the market, owing to their superior appearance.

tive changes set up in the Hay, the temperature passes these limits, the bacilli and all other organisms are killed. Incidentally, it appears that the Hay is not only improved in quality by a little heating, but it is also rendered more satisfactory from the hygienic point of view after these bacteria have been destroyed, for *B. coli* is not above the suspicion of producing intestinal troubles in cattle. After this first heat of fermentation has resulted in the death of the micro-organisms, the temperature continues to rise, and it is certain that this rise must be due to chemical changes which go on in the absence of life, rather than to physiological ones which are more directly associated with living beings. But at present we can hardly do more than guess at their nature. It may be that the oxidative, or combustion, processes are hastened in the finely divided state into which the sweated Hay resolves itself, in a fashion perhaps analogous to that associated with very finely divided platinum, which is used for lighting gas without the direct application of a flame. Many examples are known in which chemical change is accelerated,

GARDENING IN SOUTH RUSSIA.

AT fig. 191 we have reproduced a photograph kindly sent us by Professor T. Treuberg, showing a parterre in his garden, situated near Khar-koo in South Russia. It will be seen that the style is what we should describe in England as formal. The circular bed is raised into a great cone-shaped pile, and its smooth banks are planted with dwarf habited species to represent carpet bedding. Several additional photographs which are also placed at our disposal give views in the orchard and pleasure grounds, but these, unfortunately, are not suitable for reproduction. Nevertheless, they are sufficient to indicate the interesting character of this Russian garden.

THE QUINCE.

AT fig. 192 is reproduced two fruits of varieties of the Quince sent us by our valued correspondent Mr. W. E. Gumbleton, Queenstown, Ireland. They were received by this gentleman from M. Lemoine, of Nancy, who described them as of Servian origin. The pear-shaped variety is named Vranja, and the sample of this sent us weighed 15½oz. Not extraordinary when some fruits of the same variety are recorded to have weighed 2lb. 9oz. The name of the apple-shaped variety is Lescovaz.

The introduction of the Quince to England is due to the Romans during their 400 years occupation of the country. They also introduced the Grape, Fig, Apple, Pear, Plum, Mulberry, and Damson. Saxons, Danes, and other Norsemen who had settled in the country probably introduced other fruits.

Quinces are ornamental shrubs or small trees, the more common of which is *Cydonia vulgaris* and its varieties, which in the Middle Ages was much valued for its fruits, that formed a constituent of a delicious preserve called Cotignac. This delicacy was an accompaniment to many kinds of meat, and the Cotignac variety was so highly esteemed that it seldom was omitted from the dinner-table of the French nobility. When Joan of Arc entered the city of Orleans on April 29, 1429, after raising the siege, this preserve was first offered to her by the inhabitants. The common Quince and its varieties is met with throughout North and South Europe, the northern parts of Africa, and in Asia. In Italy it is extremely common. The Angers and Portuguese varieties are more

highly esteemed by the Continental nurserymen than any of the others. They employ these forms as stocks upon which to bud or graft the Pear, double-grafting them with varieties that form good unions with it. An American variety of the Orange Quince, named Rea's Monarch, has larger fruit, and is much more productive than the common *C. vulgaris* or any of its varieties. It is, moreover, free from the grittiness, hardness, and harsh flavour of the common forms, and will doubtless supersede them. The European Quinces are very hardy, and as the trees flower late they are seldom injured by frosts.

well and bear freely on the common Quince, and live at least fifty years on good soil with proper treatment, including the application of such manure as may be required so to maintain the trees in a fertile condition. M. Carrière, a French cultivator, always recommended double-grafting in the case of such Pears as Marie Louise, Jargonelle, and some others which are apt to dominate the stock when they are grafted without the intervention of a Pear graft; and to employ the cleft mode of grafting as being the more secure against wind. This method of grafting always produces healthy and fruitful trees. The varieties for

production of flowers. About a dozen varieties of *C. japonica*, and two of *C. Maulei* are given in a list published by Messrs. J. Veitch and Sons, Chelsea.

As decorative trees in the home park or garden, the common Quince and its varieties should not be lost sight of by the planter, the tree being highly ornamental in fruit and flower, perfectly hardy, compact in habit, and of moderate growth. The plants may be arranged in groups or singly as ornamental, solitary objects, in which manner the beautiful blossoms, that appear in early summer, can be observed from all sides.

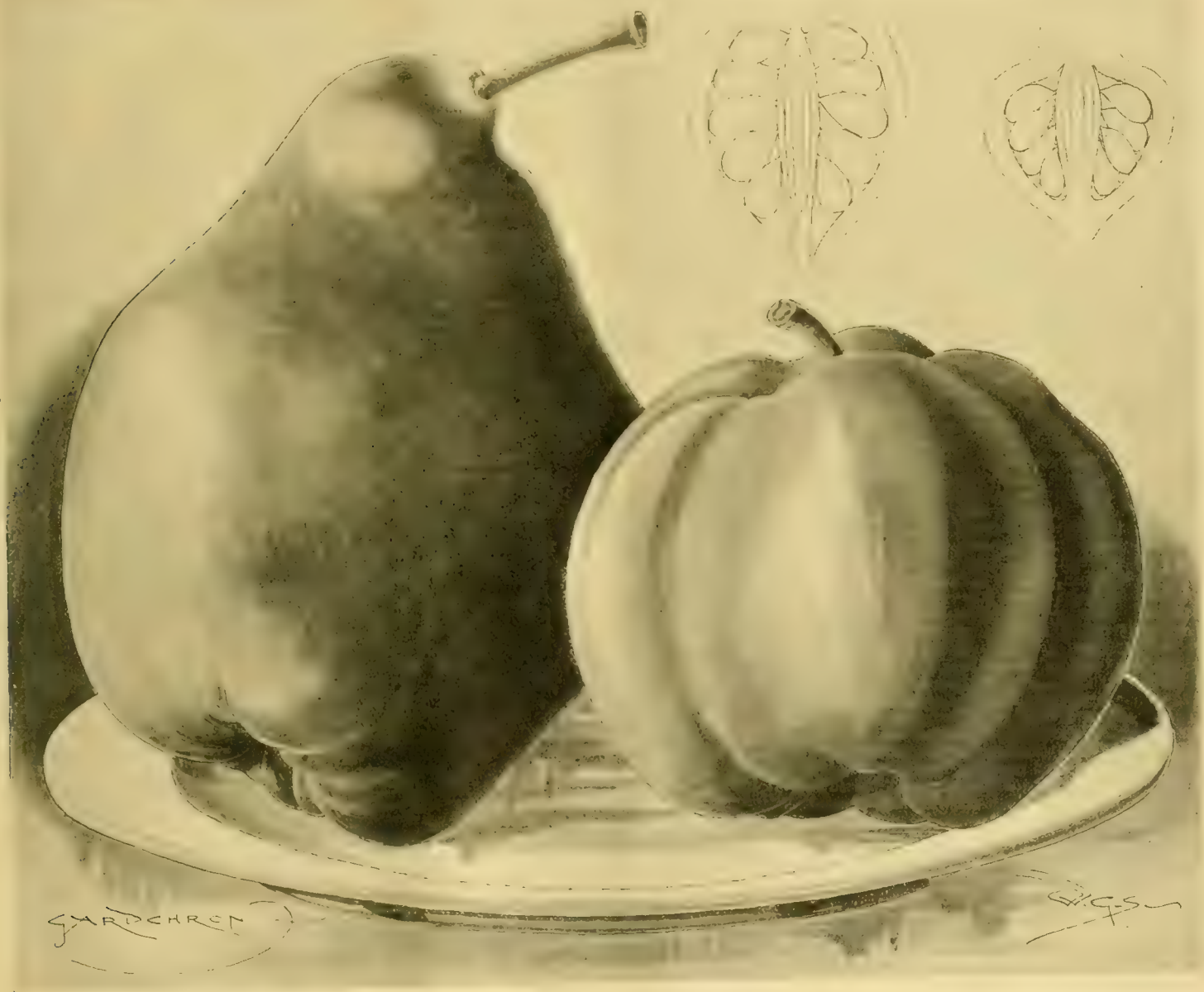


FIG. 192.—APPLE AND PEAR-SHAPED QUINCES FROM SERVIA.

The Chinese Quinces (*C. sinensis*) are rather tender in this country, and the fruit slightly gritty, cylindrical in shape, and as long as Van Mons. Leon le Clerc Pear. Some of them are said to be very delicious in flavour in the raw state. These Quinces, being of high flavour and remarkable for a delicious aroma, might be crossed, if that be possible, with some of our finer varieties of the Apple, by way of imparting their aroma to them. The common Quince is used as a stock in Continental nurseries for Cotoneaster, Medlar, and species of *Cratægus*, to which it has a nearer affinity than to the Apple.

In light sandy soils in this country Pears do

the intermediate grafts or buds should be *Beurré d'Amanlis*, *Beurré Hardy*, and *Duc de Nemours*; and these, worked low on the Quince, soon make stems, which, after two years' growth, are fit for cleft-grafting.

Pyrus japonica and *P. Maulei*, now referred to the genus *Cydonia*, are similar in regard to habit, but possess differently-coloured blossoms and fruits; those of *P. Maulei* being edible in the cooked state are fairly common in our gardens. The plants should be afforded sunny, sheltered positions, in which they will bloom and bear fruits freely, especially the variety *Maulei*. Close winter pruning, after the plants have reached the desired size, favours the

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

PREVENTION OF CORRUPTION ACT.—I was much interested in reading the letter from Sir Edward Fry in last week's issue, not only because one recognises in the writer an ex-Lord Justice of Appeal, but also by reason of the fact that Sir Edward is in an especially favourable position for discussing this question, as I believe I am right in saying that he, in conjunction with other judges of the High Court, was one of the promoters of the Prevention of Corruption Act. I for one should like to express my feeling of indebtedness to Sir Edward Fry

for having so lucidly explained our position. When this Act was first passed, some of the trade seem to have jumped to the conclusion that it was especially aimed by his Majesty's judges at the gardening trade, and accordingly felt aggrieved at the implied reflection upon the honesty of nurserymen and gardeners as a class. I have always felt this to be an entirely erroneous impression, especially as the Act did not mention any one trade more than another, and I believe that in practically all trades principals have been anxiously discussing the danger of their position under the Act in their various trade journals. I am pleased, therefore, to see from a report which appeared in *The Times* newspaper last week that my impression is evidently quite correct. The paragraph in question states that the principal wholesale warehousemen and manufacturers' agents dealing in tapestries and furnishing materials have adopted a resolution mutually agreeing that they will not give even Christmas presents "to anyone employed by any firm or company with whom they have, or are likely to have, business relations," and the paragraph goes on to say that the principal houses in the millinery, trimming and haberdashery trades have adopted similar resolutions. It is pleasant to know that the nursery trade has not been branded with the suspicion of corruption over and above any of the other trades of the country, and, as a matter of fact, I believe that the cleanness of our business methods will, on the whole, compare favourably with the methods of most other industries. Of course, I quite agree that, while our trade has evidently not been specially aimed at, we, at the same time, run just as much danger under the Act as any other trade if we should seek to defy or evade its provisions. *Enlightened.*

Duplicate Blooms at Chrysanthemum Shows.—At most of the important shows of Chrysanthemums in the midland and northern counties, the schedules allow exhibitors to exhibit many duplicate blooms on their stands, which, I think, is to be regretted. At these shows valuable money prizes are offered, and I think that no duplicate blooms should be allowed. The schedule usually states: "For 36 Japanese blooms in not fewer than 18 varieties." Sometimes it requires not fewer than 24 varieties. Then, again, a class is often provided for 24 Japanese blooms in not fewer than 12 and sometimes 18 varieties. Not only are these classes difficult to judge, but the work requires much more time, as counting, &c., is necessitated. Few visitors desire to see two blooms of one variety in an exhibit; it is too monotonous. There is no difficulty in selecting 100 good varieties of Japanese Chrysanthemums from the lists issued by nurserymen, so that no excuse can be entertained about there not being sufficient varieties of good quality. Societies should follow the practice of the National Society, and ask for distinct varieties in the various classes. Mr. E. Molyneux is quite right in drawing attention to the slovenly method of naming blooms at shows. In a very close competition that necessitates pointing, three marks should be allowed to the exhibitor who labels his flowers correctly and in a manner that all the names can be easily discerned. *A. J., Essex.*

Exhibiting Chrysanthemums on Boards and Vases.—One thing is very certain, and that is the exhibitor is not in favour of vases, and committees also, who generally have to lay out a considerable sum in purchasing vases, find it a somewhat heavy charge on the funds of their societies. Some hire them, and then the cost of transit, &c., which has to be met, forms no small consideration, having regard to the heavy stone jars generally used. At certain shows the arrangement of the blooms in vases leaves much to be desired. They are simply huddled together with little or no regard for effect. At Southampton I have been impressed with the manner in which the vases are placed in position awaiting the exhibitor to place his blooms therein, and here the blooms are generally nicely arranged. The best vases for three or more blooms I have met with are those found at the Birmingham Show. They are made of metal, and in the correct shape, and not heavy to handle. Blooms can be arranged in these with ease and satisfaction. But, returning to the main question, we hear much of competitors

preparing to show their blooms "on" boards, but they really do their best to remove the blooms as far as possible from the boards. The regulation board has to be in height 6 inches at back and 3 inches in front, but exhibitors use extending tubes, which lift the blooms at back about 24 inches from the table, and the very object in view in regulating the height of the boxes is defeated, for there is no uniformity. One of the prettiest and most tasteful methods of exhibiting blooms is that adopted by the Bath Society. The vases are squat-shaped at the base, with long, tapering necks, which will hold one of the large blooms and a bit of foliage firmly, with little or no plugging. Twenty-four or 36 blooms in distinct varieties are very attractive, and much more interesting than eight or 12 varieties with three blooms of each variety. These vases are arranged in three rows about 1 foot apart, and it is stipulated that the stems of each flower shall be at least 9 inches in length. The present boards and cases may be utilised as travelling boxes, but, of course, only two boards can be packed in the same space which three occupied. These vases, which are the invention of the chairman of the Bath Gardeners' Society, Mr. T. Parrot, could be easily adopted at all shows, for they are inexpensive and enable the blooms to be displayed with much better effect than on the boards. *W. J. Godfrey.*

Thickly Sown Peas.—Mr. A. C. Bartlett's complaint as to the far too thick sowing of edible Peas is only too well grounded. I am constantly advising both amateurs and cottagers that if they want to secure fine crops during hot weather they must not only have the ground deeply worked and well manured, but must sow thinly. Mr. Bartlett advises 2 inches apart. I advise 4 inches, because with ample and well-manured root run and the branching habits of good stocks of Peas, plants fill out wonderfully when they have ample room and plenty of moisture. Very recently I was asked by some allotment holders in Surrey to obtain for them two medium height large podding and cropping Peas for distribution to 18 workers. I obtained *Empress of India* and *Superlative*, and divided them into packets in the first case of 90 to 100 seeds, and in the second from 30 to 90 seeds. When distributed, my advice, especially in view of the fact that a competition for the best 24 pods was to follow next July, was to make each packet sow rows of from 18 to 20 feet long. Left to their own judgment no doubt each packet would have been made to sow about 6 feet rows, so strong are old bad habits in gardening. *A.*

The Culture of Cockscombs (see p. 401).—I fully agree with Mr. Potts that it is necessary to procure a good strain of seed to start with, or the best of culture would be in vain; but I do not agree with him in keeping seedling plants in small 60 size pots until they show their "combs," having proved by many years' experience that if large, well-grown plants are required they should not be checked at any stage, but encouraged to grow into strong, healthy plants before they show their combs. Again, Mr. Potts' system of lowering his plants into 8-inch pots, and only showing 6 inches of growth above the pot, must result in plants which lack attractiveness, and, in my opinion, they would resemble a small boy in his father's boots. I may state that many of my plants have been exhibited in London and the provinces with "combs" measuring 28 inches from tip to tip by 14 inches across. These plants were in 7-inch pots, and possessed healthy foliage hanging over the pots. The height of the plants is about 14 inches above the pots. The late Mr. Richard Dean on one occasion published my method of culture in the *Gardeners' Chronicle*. The mild hot-bed is not to be despised. *T. Lockie, Diddington Hall, Huntingdon.*

The Swan's Egg and Knight's Monarch Peas.—I was asked by Mr. A. Sutton, of Reading, one day recently, why one never observes the once favourite Swan's Egg Pear at fruit shows, or, indeed, in most gardens. No very obvious reply could I make to this question, and I could not but suppose that its season coincided with that of many more showy if less well-flavoured varieties, and that its size, about

that of a hen's egg, was against its cultivation. The tree is hardy, late flowering, and as a consequence a certain cropper, especially when grown on a west wall, but it succeeds well as a standard "down south." The fruits, which are borne in clusters, should be thinned rather freely so as to increase their size, as should likewise those of Knight's Monarch, a Pear that always casts many of its fruits, and fails to reach a good size if this be not done in the months of June or July. Only in the warmest localities is Monarch capable of attaining the largest size or of maturing thoroughly unless planted against a south or west wall. In cool summers in the north, even on a south wall, the fruits of this variety do not ripen in the fruit room. *F. M.*

The Yellow Fruited Mirabelle Plum.—Those gardeners who are planting Plum trees at this season would do well to include among the varieties the Mirabelle, a very old Plum, and one not much known in this country, although in Germany and France a great favourite for tarts, compotes, and as a preserve. The fruit is slightly oval, of about the size of the Crittenden Damson, of a yellow colour, with minute brown spots, and it is ripe in August and September, according to latitude. The tree is a most abundant bearer as a standard or bush, and a neat, dwarf, compact grower. *M.*

Nandina Domestica.—I am interested in this plant (see p. 408), because Lady Gertrude Rolle sent home in April last from the South of France several nice specimen plants, each bearing numerous panicles of bright red berries. I gathered, and, when dry, sowed some of them in ordinary potting soil, covering them with 1 inch of sand. Towards the end of September about a score of young plants appeared, which are now ready for potting up singly, and next midsummer they will probably be planted out-of-doors. One of our plants is almost expanding its flowers in an open border, and will most likely get cut by the frost. Doubtless the species perfects its berries in the warmer parts of Cornwall, but it would be interesting to know if such is really the case. The plant by its compact and sturdy growth appears more suitable for a sheltered nook than trained to the wall. Our plants flowered during the summer, but as yet I can see no signs of a berry; probably the weather was too sunless for pollination to take place. *James Mayne, Bickton, Devonshire.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

DECEMBER 10.—*Present:* A. E. Bowles, Esq., M.A., F.L.S. (in the Chair); Sir J. T. D. Llewelyn, Messrs. A. Worsley, C. E. Shea, J. Douglas, G. Gordon, Spencer Pickering, G. S. Saunders, H. J. Elwes, W. C. Worsdell, C. T. Drury, H. T. Güssow, R. H. Curtis, and F. J. Chittenden (hon. secretary).

Grubs in Gooseberry stem. Mr. G. S. SAUNDERS reported that he had examined the Gooseberry stem shown at the last meeting by Mr. ODELL, and had found it to be attacked by a number of small red grubs, which were hidden under the loose outer bark near the bud. They evidently feed on the cells immediately under the bark. They belong to the Diptera and probably to the family Cecidomyiidae. They are very small, being scarcely one-tenth of an inch in length. Mr. SAUNDERS suggested that as the insect probably pupates under the bark, some shoots should be enclosed in muslin sleeves so that later the fly might be identified.

Chrysanthemum indicum varieties and crosses.—Mr. CHITTENDEN reported that he had examined the Chrysanthemums shown by Mr. SMITH at the last meeting. They were divisible into two sets. In the first the result of sowing seed from *C. indicum* which had been pollinated with pollen from a rose-coloured variety, all the plants bore yellow flowers, but there was considerable variation in the depth of colour, the length and breadth of the corollas, the arrangement of the flowers, and the hardness of the foliage. It is, however, scarcely safe to argue from this instance that the colour of *C. indicum* is dominant over rose, in view of the fact that

(1) considerable variation from seed is probable in *C. indicum*; (2) there is difficulty in ensuring the pollination of the flowers of *Chrysanthemums* (or most other composites) with foreign pollen to the exclusion of pollen from the same flower or neighbouring flowers in the head; and (3) the absence of any precautions to prevent insect pollination. The second series, *C. indicum*, crossed with an almost magenta flower, showed considerable variation in colour from almost white to deep rose, as well as in form, &c. Altogether it would appear that *Chrysanthemums* were unsuitable flowers with which to attempt the elucidation of any laws regarding hybridisation. Mr. WORSLEY had also examined the flowers, and handed in a lengthy report upon colour variation in *C. indicum*, which will be printed in the *Journal* of the Society.

Californian galls.—Mr. C. O. WATERHOUSE, of the British Museum, reported that the large galls sent to the last meeting were formed by a species of *Cynips*, which could not, however, be named. The galls were similar to the English Oak marble galls, but much larger, measuring, indeed, fully 2 inches in diameter. They were of a pale brown colour, and, unlike the Oak marble gall, contained, originally, more than one grub. The perfect insects had, however, emerged.

Quince with fungus.—Mr. GUSSOW reported that he found no fungus on the Quinces shown by Mr. WORSLEY at a recent meeting, but *Botrytis cinerea*, which had evidently followed the ripening of the fruit.

Grub in *Crassula falcata*.—Mr. DRURY showed a stem of *Crassula falcata* containing the larva of the "Garden Swift Moth" (*Hepialus lupulinus*), which had burrowed up into the stem, a most unusual place for the larva of this insect to feed, as it is usually found feeding underground.

Temperature variations.—Mr. CURTIS showed several sets of thermograph records, showing the enormous variation found in the temperatures taken at different levels above the surface of the ground, and illustrating the erroneous notions as to the temperatures to which vegetation is exposed through radiation, gathered by merely taking the records in an ordinary screen.

Seedless Apple.—Mr. WORSDELL showed a photograph of a seedless Apple which had five very small growths, something like Apples, at the "eye" end. He suggested that the seedlessness was possibly brought about by the energies of growth being diverted from the seeds to the formation of these small growths.

"Sport" in a fungus.—Mr. WORSDELL also showed a specimen of a species of *Cribalaria*, in which the gills were developed upon both surfaces of the pileus, instead of upon the lower surface only.

Brassica crosses.—Mr. A. W. SUTTON showed crosses between a Savoy and Brussels Sprout, and between a Cabbage and Brussels Sprout, each of which bore a good heart and a large number of small hearts up the stem, somewhat after the manner of a Brussels Sprout. The condition, Mr. SUTTON said, was now fixed.

Summer pruning.—Mr. C. WAKELY, of Chelmsford, Essex, communicated the results of a series of experiments in summer pruning, which the Committee desired should be printed in the *Journal* of the Society.

Fruits of *Akebia lobata*.—Miss ETHEL WEBB sent fruits of this plant from Newstead, Notts., where it fruits freely every year. The plant is on a south wall, and has reached a height of about 14 feet. The fruits are freely disposed about the plant in groups of two to four, and, though now past their best, form with the foliage a very ornamental feature. Birds do not touch the fruit until frost has split the skin and exposed the contents, when they devour the black seeds embedded in the white, jelly-like pulp. Bluebottles are also partial to the fruit. The skin has a bitter flavour, which doubtless protects the fruit from birds and insects until it is split by the frost.

High frequency currents and plant life.—Mr. C. E. SHEA gave an interesting and suggestive account of the action of high frequency electrical currents upon various forms of life, dealing especially with their action upon *Phylloxera*. He considered that while a short time ago the destruction of minute organisms by means of the electrical current was within the

realms of possibility, it had now become extremely probable that in the near future the application of high frequency currents would prove a useful method of destroying many pests which were only with difficulty able to be dealt with.

TRIAL OF CELERIES AT WISLEY.

DECEMBER 16.—A meeting of the Fruit and Vegetable Committee was convened on the above date to examine a trial of some 48 stocks of Celeriac at Wisley, including four stocks of Celeriac. The members present included Mr. O. Thomas (chairman), and Messrs. E. Beckett, G. Reynolds, W. Poupert, W. Bates, J. McIndoe, H. Parr, A. R. Allan, G. Woodward, and A. Dean. All the plants were raised from seed sown on March 15. Four or more plants of each stock were lifted, and the heads were cut through their centres for examination. It was apparent that several of these Celeriacs were identical, although received from diverse sources. Some displayed a tendency to develop a flower stem. Some were soft stemmed, others displayed a tendency to decay on the outside, due, no doubt, to the excessive rainfall and to the rows of plants being in pairs. This may, perhaps, be due somewhat to the tops of the ridges being made flat rather than sharp, and thus the ridges absorbed much water. Ultimately, after very close scrutiny and testing the edible qualities of the plants, Awards of Merit were given to Early Rose (Veitch & Sons), Williams' Matchless Red (Veitch & Sons), Grove Pink (Nutting), Pink Beauty (Barr & Sons), New Solid Pink (Barr & Sons), and previous awards were confirmed to Standard Bearer (Jas. Carter & Co.), and to Iver's Non-such Pink (Veitch & Sons). It is noticeable that every variety thus selected for honours were coloured. The sole exception was that a similar award was made to Dwarf White Incomparable (Nutting). The stock was very true, and the award included Sandringham White, which is undoubtedly a synonym of Dwarf White Incomparable. It was interesting to note that, in spite of the very great prevalence of the Celery maggot this season, the plants at Wisley had suffered but slightly. Of the four stocks of Celeriac, the best was from Messrs. Jas. Veitch & Sons. It was very white, firm, and pleasant to taste. Mr. Wright stated that Celeriac roots boiled, and sliced when cold, made a very delicious salad.

GLASGOW SEED & NURSERY TRADE.

DECEMBER 14.—The annual dinner of this association was held on the above date, under the chairmanship of Mr. Alexander Cross, M.P., President of the Association. The principal toast, "The Seed and Nursery Trade," was proposed by Mr. John Gilchrist, who said Americans had done the most work in connection with the crossing of plants and the raising of new varieties. He was certain, however, that during the next ten or fifteen years there would be great progress in this respect in our own country, much of which would be due to the work of the Glasgow Seed and Nursery Trade Association.

The chairman, in replying to the toast, said the association was doing excellent work in providing lectures and in organising meetings at regular intervals for the discussion of matters affecting the trade. Much ability and experience were required in the nursery and seed business, but the workers had to be content with a modest profit. He was of the opinion that they laboured under certain legal disabilities. Within recent years many developments had taken place and new appliances had been introduced, but by Act of Parliament seedsmen were debarred from selling certain poisonous insecticides, sheep-dips, spraying materials, &c., which were sold by pharmaceutical chemists. The danger to the public was the same whether the packages were sold by a chemist or by a seedsman.

Mr. Cross spoke of the work that had been accomplished in more recent times by processes of development and selection. Some person, he said, who had noticed a Rape with a large bulb, had preserved the seed and had continued to reproduce it from seed, always selecting the best varieties. From such beginnings had come the Turnip of to-day. Similar methods had been applied to the cultivation of flowers.

LINNEAN SOCIETY.

DECEMBER 5.—At a meeting held on the above date Dr. O. STAFF, F.L.S., exhibited a series of specimens of *Spartina Townsendii* representing different stages of development, and tall and dwarf forms, and, for comparison, also typical specimens of *S. alterniflora*, *S. stricta*, and, on behalf of Messrs. H. & J. GROVES, *S. Neyrautii* from the estuary of the Bidassao River. The specimens of *S. Townsendii* and *S. stricta* were collected by the exhibitor in the Isle of Wight; those of *S. alterniflora* near Millbrook Station in Southampton Water. He pointed out the morphological differences of the three English species, which show *S. Townsendii* to hold, in many respects, an intermediate position between *S. alterniflora* and *S. stricta*, although it is different enough to be treated as specifically distinct from either. He then described the distribution of the three species, and more particularly that of *S. Townsendii*, which was first collected near Hythe in 1870 and distributed as *S. alterniflora*. Three years later the brothers Groves found it again in the same locality, and in 1881 they recognised it as a distinct new species, and named it *S. Townsendii*. At present it covers many hundreds or, may be, thousands of acres on the muddy fore-shores of the Hampshire coast and the Isle of Wight, threatening *S. stricta* with extermination in some places. There are three theories to explain the appearance of the Grass, which is too conspicuous to have been long overlooked:—(1) It may have been introduced, like *S. alterniflora*, which is a common mud-grass on the Atlantic coast of America from Newfoundland to Brazil. Lord Montagu has, in fact, stated that the people on the shores of Southampton Water have a notion that it was introduced by an Argentine ship. But so far, no *Spartina* corresponding to *S. Townsendii* has been found in America, and the Argentine species, mentioned by Arechavala and Stuckert, are distinctly different. (2) It may have originally arisen as a mutation of *S. stricta*, and, the characters having become fixed, the progeny now behaves like an ordinary species. Against this may be argued that there is no evidence, historical or morphological, for this assumption. (3) It sprang from a fertile hybrid or hybrids between *S. alterniflora* and *S. stricta*, and has assumed the character of a particularly vigorous and fairly constant species. In favour of this theory two circumstances may be adduced: first, the fact that *S. Townsendii* combines actually not a few of the distinctive characters of both species; and, secondly, that it has an almost exact parallel in *S. Neyrautii*, which was described as a hybrid of *S. alterniflora* and *S. stricta* from specimens found growing among the parents in the estuary of the Bidassao. This *S. Neyrautii* differs from *S. Townsendii* only in the more pronounced accentuation of the characters derived from *S. alterniflora*. The Adour and the Bidassao Rivers on one side, and Southampton Water on the other, are the only two places in the world, so far as we know, where *S. alterniflora* and *S. stricta* meet; and it would be a case of extraordinary coincidence if *S. Townsendii* and *S. Neyrautii* should, after all, be found to have been introduced from some other part of the world just into those two localities. An attempt of artificial crossing of *S. alterniflora* and *S. stricta* should be made. Dr. STAFF finally spoke of the Grass as a mud-binding and land-reclaiming species.

A discussion followed, in which the President, Mr. H. GROVES, Mr. J. C. SHENSTONE, and Prof. F. W. OLIVER engaged.

Several other papers were also read at this meeting.

NATIONAL DAHLIA.

DECEMBER 17.—The annual meeting of this society was held on this date at the Hotel Windsor, Victoria Street, Westminster. In the absence of the president, Mr. E. Mawley, owing to illness, the chair was taken by Mr. G. Gordon. The report and the balance-sheet for the year were presented.

The chairman, in moving their adoption, expressed the meeting's sympathy with Mr. Mawley in his indisposition. He said it was very satisfactory to learn that, in spite of an untoward season, the flowers at the last autumn show were good and numerous. He specially commended the committee for their determination to hold next year's show in the Royal

Horticultural Hall, as that place was essentially the home of all such societies, and was, in addition, easy of access. At the Crystal Palace they had found ample room and the fullest courtesy from the officials, but it was too far from London to secure the attendance of the public. The trial of Cactus Dahlias at Wisley would be resumed, and he trusted be productive of good results. He referred to the loss the society had sustained by the death of their vice-president, Dr. Masters. After making reference to Mr. Brousson's resignation, he proposed the adoption of the report and balance-sheet, which was seconded by Mr. A. Dean and carried.

To avoid a difficulty which arose at the last exhibition of two persons showing jointly as amateurs, the following regulation was adopted: "No two persons may show from the same garden, nor can two amateur exhibitors show under joint names."

Mr. Mawley was unanimously re-elected president, and Mr. H. L. Brousson a vice-president. The following officers were also elected:—Mr. H. H. Thomas, hon. secretary; Mr. Wilkins, treasurer; and Mr. J. Green as hon. auditor. With the exception of Messrs. Tulloch and Needs resigned, and by the death of Mr. S. Walker, the members of the committee, including Dr. Appleton, of Beverley, Mr. Bryant, of Salisbury, and Mr. H. Walker, of Thame, were elected.

EXTRACTS FROM THE ANNUAL REPORT.

Most Dahlia growers expected to find a very small show, but were agreeably surprised when they discovered that the display was very fairly up to the average. In fact, there were only very few exhibits less than the previous years, while the quality of the blooms was distinctly good. The amateur exhibits were again very numerous, and competition was keen. In the four classes for amateurs who have never won a prize at any previous exhibition of the society, there were in 1904 a total of 17 entries; in 1905, 30; in 1906, 28, and in 1907, 35.

Some 50 new varieties were submitted to the inspection of the judges, who awarded certificates to eight of them. On October 1 a meeting of the committee was held at the Horticultural Hall, Vincent Square, on the occasion of the fortnightly show of the Royal Horticultural Society. Seven certificates were awarded to new varieties. The total number of certificates awarded in 1906 was 15, and in the present year 15 also.

The number of new members joining the society was 28, as compared with 38 last year and 32 in the previous year. This slight falling off was solely due to two unfortunate seasons following each other and the committee fully expect that the number of new members joining the society will increase, provided next year proves only an average season. There have, however, been an unusually large number of resignations, chiefly owing to the general financial depression, so that there is a small net decrease in the membership for this year.

The committee have decided to hold the show next year on September 3, at the Royal Horticultural Society's Hall, in Vincent Square, Westminster, which is very much easier of access than the Crystal Palace, and as the society may suffer financially by these arrangements, it has been decided, at the suggestion of the trade members of the committee, that the prizes and awards in the nurserymen's competitive and non-competitive exhibits shall be purely honorary for next year. This will enable the same amount of prize money as last year to be offered in the amateur and open classes and will leave the society in a strong financial position.

First Class Certificates were awarded to the following new Dahlias in 1907:—Cactus Mauve Queen, The Bride (decorative), Flame, C. H. Curtis, C. E. Wilkins, Ivernia, Rev. Arthur Bridge, Harold Peerman, Helium, Etruria, Saturna, Clara, Dorothy, Single: Peggy, Crimson Prince. Garden Cactus: Meteor, A. D. Stoop, Mrs. J. S. Bruton, Beacon, Eclair, Lustre.

The balance-sheet showed a total income of £163 7s. 3d., and an expenditure of £157 12s. 3d., leaving a credit balance of £5 15s.

The annual exhibition will be held at the Royal Horticultural Society's Hall, Vincent Square, Westminster, on September 3.

NURSERY EMPLOYEES' UNION.

DECEMBER 12.—The first annual general meeting of this society was held at Enfield Highway on the above date. The general secretary, in the course of an encouraging report, stated that although the union had only been in existence six months, branches had already been established in Enfield Wash, Waltham Cross, Edmonton, and Hoddesdon, and that the unattached membership extended from Worthing to Newcastle-on-Tyne.

Gratification was expressed at the realisation in the case of 22 nurseries of the first item in the programme of the union, viz., the cessation of work at 1 o'clock on Saturday. After the election of officers, it was decided to hold an adjourned general meeting at Cheshunt Hall, to finish the agenda of business. The secretary's address is Nursery Employees' Union, 50, Totteridge Road, Enfield Wash, London, N.

ANSWERS TO CORRESPONDENTS.

BACTERIA: S. The organisms belong to the vegetable kingdom. The bacteria, or microbes as they are often called in popular language, are low forms of plant life.

BOOKS: H. A. J. *The Orchid Review* is published monthly, price 6d. Copies may be obtained from the Editor, Lawn Crescent, Kew.—*Constant Reader*. We know of no work dealing wholly with the subject of Chrysanthemums for market, but much useful information will be found in *Chrysanthemum Culture*, by W. Wells, or in *Chrysanthemum Culture for Amateurs and Professionals*, by B. C. Ravenscroft. Both can be obtained from our publishing department.

CELERY BOLTING: *Hampshire*. Celery will often flower prematurely if the seed be sown very early under glass, but it does not always so result, as we constantly see fine examples that show no indication of an inflorescence exhibited in the month of August. Another cause of bolting is a check to the plants when in a young stage, such as is caused by drought. This check tends to develop a seed stem or centre. There is no definite rule in relation to this matter, any more than there is in relation to the premature bolting of early spring Cabbages. Seed of certain stocks have nothing to do with bolting, as Celery plants grown for producing seeds are raised from late sowings. The seedlings are planted out all the winter unearthened; there, in due course, they develop flower stems and produce seed. Possibly next year you may have no trouble in this matter.

MILDEW ATTACKING VINES: *Subscriber*. Dryness of the soil in which the Vines are growing is a condition favouring an attack of mildew, and equally so is the presence of too much moisture in the atmosphere with insufficient heat in the vicinity at a time when the young foliage and Grapes are specially susceptible to the attacks of fungoid diseases. You state that all the Vineries are well heated and that they are ventilated with care. Also that during the present year after the Grapes were thinned mildew appeared for the second time, notwithstanding the cleansing process to which the Vines and Vineries were subjected before forcing was begun. A current of cold air coming in contact with the Grapes when the ventilators are opened perhaps unduly wide, at this tender stage of growth would in itself be sufficient to account for the presence of mildew on the berries. In short, extreme, internal atmospheric conditions prevailing in a Vinery will favour the appearance of mildew—either a low atmospheric temperature with considerable moisture or a dry atmosphere with cold draughts will cause the mischief while the Vines are in a young stage of growth. We are not quite certain whether dryness at the roots may not be responsible for the presence of mildew in your Vineries, seeing that no mention is made in your letter regarding the condition of the Vine borders. You should have filled the Vineries operated on quite full with sulphurous vapour, applied through one of Campbell's vaporising machines, so as to leave a thin coating of sulphur on every leaf and berry in the house. The vaporising should, as a matter of course, be done in the evening after the sun has ceased to shine on the Vineries. You appear to be unnecessarily alarmed about the mildew appearing on the leaves of the young growths made on the extremities of the laterals close up to the glass and the top ventilators during the autumn months. Seeing that external, as well as internal, atmospheric conditions were then quite uncongenial to the requirements of the leaves which you allowed the Vines to send forth at that late period of the year, it is not surprising that mildew should attack the young growths not only of the Vine, but also of the Rose and Peach, made under the conditions indicated. You should have pinched out the young growths as soon as they appeared, and thereby helped your Vines to gradually mature their leaf and wood growths. It would be very unwise on your part to burn sulphur or brimstone in any form in your Vineries when the Vines have shed their leaves, or, indeed, at any time during the

year. All you need do is to thoroughly wash the woodwork and glass with soft-soapy water, also the Vines, afterwards painting the rods with a liquid composition consisting of 4 ozs. of soft soap dissolved in a gallon of boiling water and a wineglassful of petroleum. This should be well mixed with the water by drawing it into the syringe and discharging the liquid into the vessel again a few times before adding sufficient pulverised clay and a couple of handfuls of sulphur to give it the consistency of paint. Dab the paint well into every nook and cranny around the spurs and other parts of the entire Vine above the ground line, and afterwards sling the rods loosely up to the wires for a few weeks. Remove the loose surface soil from the borders and lay on a top-dressing, consisting of three parts good loamy soil, one of horse-droppings, and one of old lime rubble or wood ashes, the whole being well mixed, following this with 3 inches thick of horse-droppings, or short stable manure, and then give the whole a good watering. If the Vines are thus treated, and proper cultural treatment is afforded them during the ensuing year, they may be expected to remain free from mildew.

MULCHING APPLE TREES: F. G. C. In applying a mulching to any tree, the manure should not be placed against the stem. Allow a bare space of a foot or more about the bole of the tree.

MUSCAT OF ALEXANDRIA GRAPES: G. W. The berries sent us showed signs of shanking; probably the outside border needs attention. If the roots are in a cold, unsuitable medium, the berries usually fail to develop their proper colour. Endeavour to promote a fibrous root system near to the surface of the soil, where the food materials are more exposed to the influences of warmth and oxygen of the air. Do not afford too heavy dressings of artificial manures.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers.*

FRUITS: J. D. C. 1, Belle Dubois; 2, Tower of Glamis; 3, Herefordshire Beefein; 4, Pile Russet; 5, Reinette de Canada.—W. D. & S. Apples: 1, Summer Golden Pippin; 6, Gooseberry Apple; 7, Golden Russet; 9, Sturmer Pippin; 10, Duke of Devonshire. Pears: 1, Autumn Nelis; 5, Bergamot d'Esperen; 6, Late Bergamot; 7, Josephine de Malines; 8, Beurré Rance; 4 and 9 are both too small for correct naming.

SULPHO-NAPHTHOL AS A REMEDY FOR HOLLYHOCK DISEASE: J. R. P. & Sons. This substance may be obtained from Mr. Alban Atkins, Chemist, 243, West End Lane, Hampstead, N.W.

WOOLLY APHIS ON APPLE TREES: A. W. Spray the trees now with the following dressing:—1 lb. caustic soda, $\frac{3}{4}$ lb. carbonate of potash, 10 ounces of soft soap, and 10 gallons of water, adding the soft soap last of all. The operator should wear leather gloves during its application. In summer time spray the trees with a solution of Calvert's carbolic soap, using 1 ounce of the soap to each gallon of water. There are various patterns of spraying machines, and these are enumerated in the catalogues of the various horticultural sundriesmen, whose addresses may be found in our advertising columns.

COMMUNICATIONS RECEIVED.—R. S.—T. P.—E. Beckett—F. Jordan—T. Lunt—W. F.—J. Lane—Saxon—R. L. C.—F. M.—J. L.—J. MacP. U.S.A.—E. Young—E. Slavion—G.—A. M.—H. W.—E. W. D.—Geo. Abbey—W. G. S.—A. D.—H. W. W.—H. M. V.—J. V.—Dr. Otto S.—J. W.—T. H.

